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ABSTRACT

As one of the components of the Project ACTIVE (All Children Totally Involved Exercising) Teacher Training Model Kit, the manual is designed to enable the educator to organize, conduct, and evaluate individualized-personalized physical education programs for children (prekindergarten through high school) with breathing problems. An introductory chapter covers definitions and student and teacher behavioral objectives. Chapter II explains procedures for identifying the needs of children who suffer from breathing problems and techniques for gathering preprogram information in terms of vital capacity, cardiorespiratory endurance, and self concept. A systematic procedure for assessing student progress effectively is described in Chapter III. Chapter IV shows the interrelationship between the diagnostic and prescriptive processes. Chapter V focuses on the evaluation of student progress at the end of a specific block of time so that a decision can be made regarding subsequent programing. A final chapter outlines diaphragmatic breathing exercises and cardiorespiratory endurance activities designed to strengthen abdominal musculature and proper breathing technique and lead to more efficient and effective utilization of the heart, lungs, and circulatory system. Among appendixes are a flow chart and activity checklist, vital capacity norms, and a list of supply and equipment needs. (SBH)

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BREATHING PROBLEMS

AN INDIVIDUALIZED PROGRAM

Thomas M. Vodola, Ed.D.
Project Director

Project ACTIVE: All Children Totally InVolved Exercising

Project Number: 72-341, Title III-IV (C), ESEA

MEMO FROM THE COMMISSIONER

"On behalf of the Department of Education, State of New Jersey, I wish to bring Project ACTIVE to the attention of educators throughout the nation. The program has made a significant contribution to both physical and special education in New Jersey and thus will be of interest to both educators and parents."

Fred G. Burke

Dr. Fred G. Burke
Commissioner of Education
New Jersey Department of Education

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1976

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	Maple Shade
	New Lisbon State
	Willingboro
Camden	Bellmawr
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PREFACE

The development of the Project ACTIVE manual, *Adapted Physical Education: Breathing Problems* was a cooperative effort of the Township of Ocean School District and the Office of Program Development, Division of Research, Planning and Evaluation/Field Services, Department of Education, State of New Jersey.[1] The manual provides a sound basis for individualizing a physical education program for students who evidence breathing problems.

In 1975 the Project ACTIVE manual, *Adapted Physical Education: Breathing Problems* was validated by the standards and guidelines of the United States Office of Education as successful, cost-effective and exportable. As a result, the program is now funded through the New Jersey Elementary and Secondary Act, Title III program to offer interested educators the training and materials required for its replication. This manual was prepared as part of the program's dissemination effort.

The purpose of Title III is to encourage the development and dissemination of innovative programs which offer imaginative solutions to educational problems. Project ACTIVE achieved this purpose by disseminating its innovative program to 500 teachers and paraprofessionals through 24 regional workshops. Further, as of June 1975, 76 school districts and agencies in the State of New Jersey have adopted or adapted some aspect of the individualized physical education program in accordance with the educational needs of their districts – involving more than 10,000 individuals.

This manual has been prepared as one of the components of the Project ACTIVE Teacher Training Model Kit. Other component parts of the model kit which are available to those who are interested in adopting or adapting the projects individualized-personalized instructional concept are cited below:

- Developmental Physical Education: Low Motor Ability
- Developmental Physical Education: Low Physical Vitality
- Adapted Physical Education: Nutritional Deficiencies
- Adapted Physical Education: Postural Abnormalities
- Developmental & Adapted Physical Education: A Competency-Based Teacher Training Program
- Adapted Physical Education: Motor Disabilities or Limitations
- Adapted Physical Education: Communication Disorders
- Teacher Training Filmstrip: A Competency-Based Approach
- Motor Ability Filmstrip: An Individualized-Personalized Approach

[1] Adapted Physical Education is defined as that aspect of the physical education program which addresses itself to the provision of enrichment of physical activities for those students who exhibit medically-oriented problems.

These manuals have been validated for national dissemination and may be purchased from the project director.

Districts interested in establishing individualized physical education programs for the handicapped need assistance. The following dissemination-diffusion services are being provided to aid implementing schools during the initial phases of program installation:

- Teacher training workshops
- Individual pupil time prescriptions
- Certificates of merit for pupil achievement and/or improvement
- Monthly issue of the ACTIVE Newsletter
- Test instruments to excess pupil performance
- Development of school norms
- Other general consultant service

For additional information regarding the Model Kit, other awareness materials, or available services, the reader is requested to contact:

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The manual, *Adapted Physical Education: Breathing Problems* is based on the Developmental and Adapted (D&A) Program developed by the Project Director in the Township of Ocean School District, Oakhurst, New Jersey.

Appreciation is expressed to the Township of Ocean Board of Education, Superintendent of Schools, the D&A Council, teachers, students, and parents for their total commitment to the program. Special appreciation is accorded to the Township of Ocean Physical Education Department for their unstinting support and effort.

To Prentice-Hall, Inc., a special note of thanks for granting the Project Director permission to include materials from his text, *Individualized Physical Education Program for the Handicapped Child.*

Sincere appreciation is also accorded to the Advisory Council members who assisted in the reviewing and editing process: Mr. Sal Abitanta, Consultant, New Jersey State Department of Education, Dr. David Bilowit, Professor, Kean College of New Jersey, Mrs. Edwina M. Crystal, School Psychologist, Township of Ocean School District, Mr. Al Daniel, Coordinator, Developmental Physical Education, Cherry Hill School District, Dr. George Gerstle, Assistant Professor, Glassboro State College, Mr. Paul Porado, Program Director, Office of Special Services, New Jersey Department of Education, and Dr. Marion Rogers,* Professor, Glassboro State College. Also special thanks to the project consultants; Miles Drake, M.D., representative of the New Jersey Chapter of the American Academy of Pediatrics; Dr. Raymond Weiss, Professor, Department of Health, Physical Education and Recreation, New York University; and Dr. Julian U. Stein, Director, Program for the Handicapped, American Association of Health, Physical Education and Recreation, Washington, D.C.

To Mrs. Jean Harmer, Mrs. Mary Kesperis, Mrs. Dorothy Smith, and Mrs. Ellen Kearney, we express gratitude and appreciation for their painstaking devotion to the development of the intermediate "product."

Grateful appreciation is expressed to the New Jersey State Department of Education and the Title III staff members for their continued assistance and support. To Dr. Lillian White-Stevens, a deep debt of gratitude for her editing expertise.

Special thanks are given to the Project ACTIVE cadre team, for the many hours they devoted to assisting in the restructuring of the "final" product. The synthesizing team consisted of: Mrs. F. June Graf, Livingston School District; Mr. Robert Fraser, Wayne Township Public Schools; Mr. Thomas Cicalese, Morris Hills Regional District; Mr. Tim Sullivan, Montclair State College; Mr. G. "Buzz" Buzzelli, Monmouth College; Mr. Roy Lipoti, New Lisbon State School, Garden State School District; Mr. Edward Korzun, Orange Public School System; Mr. Thomas Pagano, Township of Ocean School District; Mr. Lawrence A. Guarino, Newark School District; Mr. Al Daniels, Cherry Hill School District; and Dr. David Bilowit, Kean College of New Jersey. Credit for the art work is accorded to Mr. Athan Anest, Wall Township School District.

*Recently deceased.

To the many authors and publishers who permitted the use of their materials in the manual, I express my sincere appreciation.

Finally, to Emil Praksta** a representative of the South Jersey Educational Improvement Center, the co-director of this project and a personal friend, my sincere appreciation for his constant stimulation, support, and critical review of all materials.

A final note: Although the aforementioned "team" made many constructive suggestions which were included in the manual, I accept full responsibility for the final product, and any criticisms thereof, because all final decisions were a reflection of my personal philosophy.

Thomas M. Vodola, Ed.D.
Title III, Project Director

**Recently deceased

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INTRODUCTION

CHAPTER ONE

INTRODUCTION

OVERVIEW

Adapted Physical Education: Breathing Problems has been developed to serve the purposes:[1]

1. Provide a manual for training physical educators, special educators, and recreation teachers so they can achieve the minimal competencies necessary to implement an individualized aerobics program for students in pre-kindergarten through grade 12 who evidence breathing problems.
2. Provide practitioners in the field with a structured procedure for individualizing and personalizing an aerobics program for students who evidence asthma, cystic fibrosis, emphysema, or any breathing problems.

During 1974-75, a research study was conducted to compare the relative effects of individualized physical education and traditional physical education programming on students who evidence breathing problems. Subjects were matched on the basis of age, sex, and pre-test vital capacity scores and placed in an experimental group (individualized adapted physical education involvement), and a control group (traditional physical education and/or classroom activities). The post-test data revealed the individualized program as significantly superior to the traditional physical education. (See Appendix A for the study data.) Based on these findings the program was validated according to the standards and guidelines of the United States Office of Education as innovative, successful, cost effective and exportable.

Students with breathing problems have extreme difficulty expelling air from the lungs. When this is accompanied by emotional upset, the problem frequently induces a "breathing attack", suffocation due to the constriction of the air passages.

The manual provides the reader with a sequential approach to initiating an individualized physical education program designed to ameliorate the breathing problems. This chapter contains the definition of terms and student and teacher behavioral objectives. Subsequent chapters detail the individualized process via the acronym T.A.P.E., i.e., test, assess, prescribe, and evaluate.[2] (For a detailed description of the step-by-step procedures necessary for program implementation, the reader is referred to the flow chart and activity checklist in Appendix B.)

Fig. 1 - 1 Active Awareness Workshop
(Texas Womens University, Denton, Texas)

[1] Prior to admission to the Adapted Physical Education Program the student must have a medical release signed by the family or school physician and the parents. Furtner, the physician must provide the prescriptive activities and the duration of program involvement.

[2] Frank Hayden, *Physical Fitness for the Mentally Retarded, p.9.*

DEFINITIONS

Since this manual provides an *individualized-personalized* cardiorespiratory program for children with *breathing problems,* definitions of the three terms are warranted.

Breathing Problems

A breathing problem is a respiratory difficulty in an individual which results in an individual's limited ability to expel air.

Individualized Instruction

Diagnosis and prescription are the basic ingredients necessary for the provision of individualized instruction. The strategies involved include: formal and informal testing; formative and summative assessment; prescription; and evaluation.

Personalized Instruction

Personalized instruction deals with the humanistic aspects of the teaching-learning process. It stresses not only the development of teacher-pupil and pupil-pupil rapport but also the enhancement of the child's self-concept.

STUDENT BEHAVIORAL OBJECTIVES[1]

1. Demonstrates a 20% improvement in his vital capacity score (grades K-12). Evaluative criteria: pre- and post-dry spirometer, or "hissing" test. (Student performance is assessed by the teacher in grades K-6 and by the partner in grades 7-12).
2. Manifests a positive self-concept, or attitude toward physical activity (grades K-12). Evaluative criteria: pre- and post self-concept test, grades K-4:[2] pre- and post Wear Attitude Inventory, grades 7-12 (10% gain in raw score).[3] (Student performance is assessed by the teacher.)
3. Demonstrates an awareness of his exercising and activity tolerance limits (grades 7-12). Evaluative criteria: post-test vital capacity score decrease – exercises and activities remain the same; post-test vital capacity score remains the same as the pre-test or increases – exercises and activities are increased. (Student performance is assessed by his partner.)
4. Demonstrates a 10% improvement in cardiorespiratory endurance (grades 7-12). Evaluative criteria: pre- and post-test 8-minute run – grades 7-8, and 12-minute run – grades 9-12. (Student performance is assessed by the partner.)
5. Evidences a 10% reduction in "breathing attacks" (grades K-12). Evaluative criteria: a comparison of the number of "attacks" during a thirty-day period before and after the program. (Assessment is made from information provided by the student and/or parents.)
6. Evidences a 10% decrease in the severity of his attacks (grades K-12). Evaluative criteria: a reduction in the intake of medication. (Assessment is made by the parents or school nurse.)

TEACHER BEHAVIORAL OBJECTIVES[4]

1. Measures vital capacity by use of the wet and dry spirometer. Evaluative criteria: test directions provided.
2. Measures vital capacity by use of the "hissing" method. Evaluative criteria: test directions provided.
3. Determines a subject's physical activity tolerance limits and prescribes accordingly. Evaluative criteria: increasing prescriptive activity when the post-test score is the same as, or higher than the pre-test score.
4. Teaches diaphragmatic breathing exercises. Evaluative criteria: breathing exercises provided.
5. Lists (and provides a rationale for) activities a subject can perform in the unrestricted program. Evaluative criteria: activities recommended by the American Medical Association and their affiliates.

Fig. 1 - 2 Teacher Training Program
(University of Northern Iowa, Cedar Falls, Iowa)

[1] Appendix C illustrates Certificate of Merit which is issued to students who achieve performance objectives.

[2] Angelo S. Bolea, Donald W. Felker and Margaret D. Barnes, "A Pictorial Self-Concept Scale for Children in K-4." Permission to publish granted.

[3] C.L. Wear, "Construction of Equivalent Forms of an Attitude Scale," Research Quarterly (Courtesy of A.A.H.P.E.R.).

[4] Teacher Certificate of Achievement is located in Appendix D.

TEST PROCEDURES

TAPE

CHAPTER TWO

TEST PROCEDURES

TAPE

INTRODUCTION

For many years, children with breathing problems have been excluded from vigorous physical activity, on the supposition that such activity triggers the onset of breathing attacks. However, evidence gathered in recent years tends to refute this theory. Proponents of the activity theory contend:

1. Exercises which improve diaphragmatic breathing will minimize the onset and severity of breathing attacks.
2. Properly prescribed exercises and activities have a therapeutic effect which, by improving the emotional stability of the afflicted individual, minimizes the occurrence of breathing attacks.
3. Inactivity engenders atrophy of the breathing apparatus; whereas properly prescribed aerobics activities (i.e., activities which place an increasing demand on the cardiorespiratory system) increase the functional breathing capacity of the individual.

Chapter II provides procedures for identifving the needs of children who suffer from breathing problems. The first section is devoted to the gathering of background information. The remainder of the chapter provides suggested techniques for gathering preprogram information in terms of vital capacity, cardiorespiratory endurance and self-concept.

BACKGROUND INFORMATION

Admission to the Adapted Physical Education Program for a medically-oriented problem requires approval by parent and family physician and a prescriptive list of activities provided by the physician. During this preprogram phase the teacher reviews the medical history of the child and records information regarding:

the number and severity of attacks
the time of day the attacks occur
factors that may contribute to breathing difficulties such as climatic conditions and allergies
the use of medication and dosage
other information that may assist in subsequent program planning

The D&A teacher (Developmental and Adapted Physical Education) should work closely with the school nurse who can readily provide most of the essential background information. A conference should also be held with the student for two purposes: he can provide the most reliable information; the teacher can explain the program and the values to be derived. Above all, the child must realize that he alone determines the extent and duration of his program.

TESTS

Administration of Dry Spirom

1. Set the index to zero by rotating the knurled Bezel ring until the pointer is coincident with the red 0 mark.
2. Attach a clean disposable mouthpiece. The instrument is now ready for use.
3. The patient inhales deeply two or three times and exhales completely. After this is done instruct the patient to take another deep inspiration and then to exhale forcibly into the disposable mouthpiece connected to the instrument. The forced expiration should be regular and even. *It is not necessary for the patient to blow hard;* a slow, even, forced exhalation is optimum.
4. Note the position of the pointer and read the vital capacity from the dial. This reading is in cubic centimeters.

Subject is allowed three trials and the best score is tabulated on the Vital Capacity Curve Chart as resting VC. The VC score is the volume of air expelled. (Refer to Figure 2-1 for illustrations of the spirometer and proper test performance.)[2]

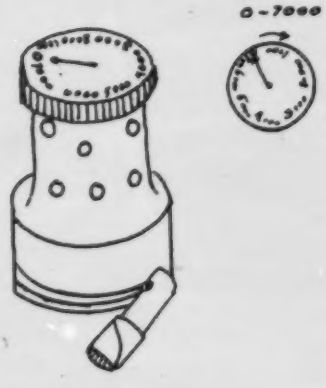


Fig. 2-1a Dry Spirometer

Fig. 2-1b Vital Capacity Test

Caution: Student must be completely flexed at the waist upon completion of expiration to insure the expelling of all air, and must release air into the mouthpiece through pursed lips (with nostrils closed).

Administration of Hissing Test

If a dry spirometer is not available, the teacher can gather baseline information regarding lung capacity by administering the hissing test. The procedure requires the student to hold his nostrils closed and expirate slow and steady through pursed lips. The teacher uses a stop watch to determine the number of seconds required to expel the air and records the information on the VC Chart.[3] (Refer to Figure 2-2.)

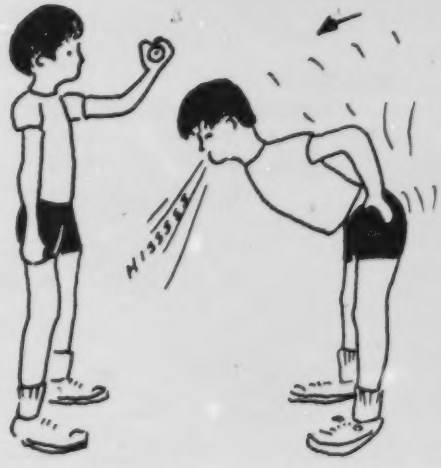


Fig. 2-2 Hissing Test

[1] Propper Compact Spirometer: For Measurement of Vital Capacity.

[2] A correlation coefficient of .83 was obtained in testing 27 13-year-old males with the dry spirometer in Ocean Township High School.

[3] Correlation coefficients of .48 to .83 were obtained for the hissing test for 7-year-old children in the Township of Ocean School District (n's of 25 to 39).

Administration of Cardiorespiratory Endurance Test[1]

200 yard run, ages 6-11 (grades 1-6). After demonstration of the sprint start, the students assume the starting position with the fingertips behind the starting line. Commands are: "take your mark;" "get set;" and "go". The instructor should start the time when the subject "moves" rather than on the command "go". Encourage the students to run at full speed beyond the finish line. If a student does not run as fast as he can, do not record his score as the time will be invalid. For consistency, run the 200 yard dash in a straight line (preferably on turf). Gym shoes or shoes may be worn; stockings or bare feet are not permitted.

Attempts: 1 or more, if necessary
Scoring: Time in seconds

8-Minute run, ages 12-13 (grades 7-8).

1. Sub-divide the 440 yard track into eight equal sections, 55 yards each section.
2. Place a flag marker at each section, e.g., "1", "2", "3", etc.
3. "Pair" all students as "1's" and "2's", prior to testing.
4. On command have all of the "1's" (half the class) run for an 8-minute period. The No. 2's record the distance covered by their partners.
5. At the termination of the 8-minute period, the instructor blows the whistle, terminating the run. The No. 2's report their partner's scores to the recorder, e.g., 3.6 would indicate three complete laps, plus the passing of six markers. Table 2-1 provides a chart for converting laps to yards.
6. Reverse the procedure and have the No. 2's run and the No. 1's act as recorders.

Attempts: 1 – Scoring: Total laps, plus flags passed in 8 minutes.

Fig. 2-3 200-Yard Run

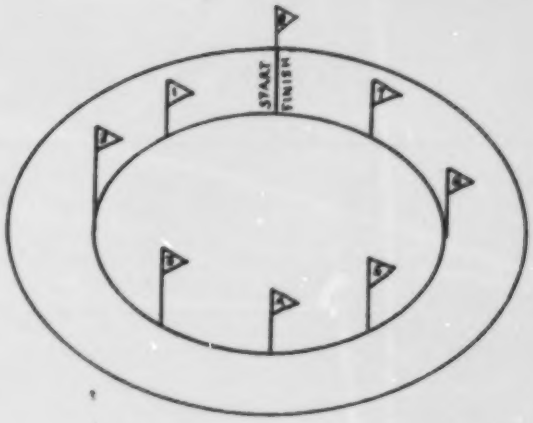


Fig. 2-4 8-Minute Run

12-Minute run, ages 14-18 (grades 9-12). The same test directions as for the 8-minute run except that the students continue running for a 12-minute period.

Attempts: 1 – Scoring: Total laps, plus flags passed in 12 minutes.

Administration of Self-Concept Tests

Pictorial self-concept scale test[2] (K-4). Directions:

Boys and girls, my name is . Today we are going to do something that is *NOT* a school test but is like a game. (Have teacher help in passing out cards, colored sheets, and small blue pieces of paper. Make sure teacher sees there are *boy* cards and *girl* cards.)

Does everyone have a blue sheet of paper, a pink sheet and a yellow sheet? Does everyone have a pack of pictures?

Put your colored paper on the desk with the blue on the left. (Show them by holding up papers, or drawing them on blackboard, or taping the sheets to the blackboard – big blue at the left as you face the blackboard.)

Now this is where the game begins. You each have a pack of pictures. In each picture there is a boy or girl with a star on his shirt or dress. Do you see the child with the star on his shirt or dress on your first picture? So you are looking for the child that has the star on his shirt or dress. Sometimes there will be pictures with more than one child. Which child will you be looking for? (A. child with a star, etc.) If you think that the boy or girl with the star is like you, put the picture on the blue sheet of paper. (Point to sheets on board). The blue sheet of paper is for pictures that are like you. If you think that the boy or girl with the star is sometimes like you, put the picture on the pink sheet of paper. The pink sheet of paper is for pictures that are sometimes like you. If you think that the

[1] Be sure medical approval has been granted. Inform the child that if he has any breathing difficulty he should walk. If breathing becomes labored, he should stop.

[2] Angelo S. Boles, Donald W. Felker and Margaret D. Barnes, "A Pictorial Self-Concept Scale for Children in K-4". Permission to publish granted.

boy or girl with the star is not at all like you, put the picture on the yellow sheet of paper. The yellow sheet of paper is for pictures that are not at all like you.

If the picture of the child with the star is like you, where will you put the picture? (On blue). If the picture of the child with the star is sometimes like you, where will you put the picture? (Pink). If the picture of the child with the star is not at all like you, where will you put the picture? (Yellow).

Do you understand what you are going to do? When you have a question raise your hand and I'll help you. Remember you are the one to choose where your picture will go. When you are through, leave the pictures on the sheets of paper, raise your hand, and I will come to see you when I can. I might be busy so please leave the cards in the piles and wait. (Walk around, check layout.)

Note: A packet of test cards will be provided in class.

School sentiment index: secondary level.[1] The School Sentiment Index consists of 82 statements regarding various aspects of school, to which students respond by indicating either strong agreement, agreement, disagreement or strong disagreement to each. This self report device attempts to secure in a rather straightforward fashion, a student's responses to statements which pertain to five aspects of attitude toward school. Examples of each dimension (for which subscale scores may be obtained) are: (1) *Teacher:* "My teachers give assignments which are too difficult," (mode of instruction); "My teachers allow students some choice in what they study in class," (authority and control); "My teachers are interested in the things I do outside of school," (interpersonal relationships). (2) *Learning:* "I often buy books with my own money." (3) *School* structure and climate: "I enjoy the social life here." (4) *Peer:* "Students here aren't very friendly." (5) *General:* "Each morning I look forward to coming to school." From these examples it can be seen that if a student wished to answer untruthfully, in such a way that his responses might be viewed in a better light, it would not be too difficult to do so. Such tendencies to supply false responses can be minimized by utilizing as the administrator a person other than the classroom teacher, and by administering the measure anonymously.

Items representing each subscale are as follows:

Teacher:
Mode of Instruction: Items 1, 8, 10, 17, 19, 25, 32, 33, 37, 40, 44, 49, 56, 75, 80
Authority and Control: Items 6, 15, 38, 42, 43, 59, 61, 67, 71, 74
Interpersonal Relationship with Students: Items 3, 12, 21, 28, 46, 47, 51, 57, 65, 72, 77, 79
Learning: Items 11, 20, 23, 27, 30, 34, 35, 52, 66, 73, 81
Social Structure and Climate: Items 5, 7, 14, 16, 24, 31, 36, 39, 48, 55, 60, 63, 69, 70, 76
Peer: Items 9, 18, 26, 41, 45, 50, 60, 64
General: Items 2, 4, 13, 22, 29, 53, 54, 58, 68, 78, 82

School sentiment index: Directions:

The School Sentiment Index may be administered in a variety of ways:

1. The entire set of 82 items may be administered and a single score obtained, yielding a global estimate of attitude toward school.
2. The 82 items may be administered, but items representing each subscale may be scored separately, yielding information on the attainment of each objective.
3. Only those subscales representing the objective(s) of interest may be administered and scored.

It is expected that students will be able to respond to the 82 statements in approximately 15-20 minutes. If the administrator feels that the students' reading capabilities will prohibit their completing the instrument in this time period, the statements should be read orally to the students.

Before beginning the measure, read the directions orally. Be sure students clearly understand the procedure for completing the instrument.

If the instruments are to be hand scored, the answer sheets provided may be used. If machine scoring is available and is to be used, responses should be recorded on the appropriate answer sheets; additional instructions in the use of the answer sheets may be necessary.

Emphasize that there are no "right" or "wrong" answers. Remind the students that they are *not* to write their names on the answer sheets. If additional information is needed from students, such as their school or class, ask them to write this information on the answer sheet.

Discourage the students from asking questions regarding subtle interpretations of the statements.

Wear attitude inventory. (5-12).[2] Directions: Below you will find some statements about physical education. We would like to know how you feel about each statement. You are asked to consider physical education only from the standpoint of its place as an activity course taught during a regular class period. No reference is intended in any statement to inter-scholastic or intramural athletics. People differ widely in the way they feel about each statement. There are no right or wrong answers.

You have been provided with a separate answer sheet for recording your reaction to each statement. (1) Read each statement carefully, (2) go to the answer sheet, and

[1] *Attitude Toward School, Grades K-12,* Revised Edition (Los Angeles, Calif: Instructional Objectives Exchange, 1972), pp. 115-125. Permission to publish granted.

[2] C.L. Wear, "Construction of Equivalent Forms of an Attitude Scale," *Research Quarterly* (Courtesy of A.A.H.P.E.R.).

TABLE 2-1

DISTANCE RUNNING CONVERSION CHART

(Courtesy of the Township of Ocean School District)

Laps	Yards	Miles	Laps	Yards	Miles	Laps	Yards	Miles	Laps	Yards	Miles
0.1	55		2.1	935		4.1	1,815		6.1	2,695	
.2	110		2.2	990		4.2	1,870		6.2	2,750	
.3	165		2.3	1,045		4.3	1,925		6.3	2,805	
.4	220		2.4	1,100		4.4	1,980		6.4	2,800	
.5	275		2.5	1,155		4.5	2,035		6.5	2,915	
.6	330		2.6	1,210		4.6	2,090		6.6	2,970	
.7	385		2.7	1,265		4.7	2,145		6.7	3,025	
1.0	440	¼	3.0	1,320	¾	5.0	2,200	1¼	7.0	3,080	1¾
1.1	495		3.1	1,375		5.1	2,255		7.1	3,135	
1.2	550		3.2	1,430		5.2	2,310		7.2	3,190	
1.3	605		3.3	1,485		5.3	2,365		7.3	3,245	
1.4	660		3.4	1,540		5.4	2,420		7.4	3,300	
1.5	715		3.5	1,595		5.5	2,475		7.5	3,355	
1.6	770		3.6	1,650		5.6	2,530		7.6	3,410	
1.7	825		3.7	1,705	1	5.7	2,585		7.7	3,465	
2.0	880	½	4.0	1,760		6.0	2,640	1½	8.0	3,520	2
									8.1	3,575	
									8.2	3,630	
									8.3	3,685	
									8.4	3,740	
									8.5	3,795	
									8.6	3,850	
									8.7	3,905	
									9.0	3,960	2¼

(3) opposite the number of the statement place an "x" in the square which is under the word (or words) which best expresses your feeling about the statement. After reading a statement you will know at once, in most cases, whether you agree or disagree with the statement. If you agree, then decide whether to place an "x" under "agree" or "strongly disagree." If you disagree, then decide whether to place the "x" under the "disagree" or "strongly disagree." In case you are undecided (or neutral) concerning your feeling about the statement, then place an "x" under "undecided." Try to avoid placing an "x" under "undecided" in very many instances.

Whenever possible, let your own personal experience determine your answer. Work rapidly, do not spend much time on any statement. This is not a test, but is simply a survey to determine how people feel about physical education. Your answers will in no way affect your grade in any course. In fact, we are not interested in connecting any person with any paper – so please answer each statement as you actually feel about it. Be sure to answer every statement.

Test Scoring

Vital capacity. VC is recorded on the basis of the results of the dry spirometer reading or the hissing time duration. (Refer to Table 2-2 for a copy of the Chart for recording dry spirometer scores. Table 2-3 provides a similar chart for recording scores in seconds.) The student is allowed three trials and the best score is tabulated on the appropriate VC chart.

VC progress is indicated by connecting the weekly preactivity dots. A ruler is used to plot the VC line. The date of the expiration test should be recorded below each respective week.

Equipment needed. A dry spirometer and ruler or a stop watch and a ruler are required – depending upon the test selected.

Cardiorespiratory endurance. The raw scores for the 200 yard run, 8-minute run, or 12-minute run are to be recorded on Table 2-4 below.

TABLE 2-2

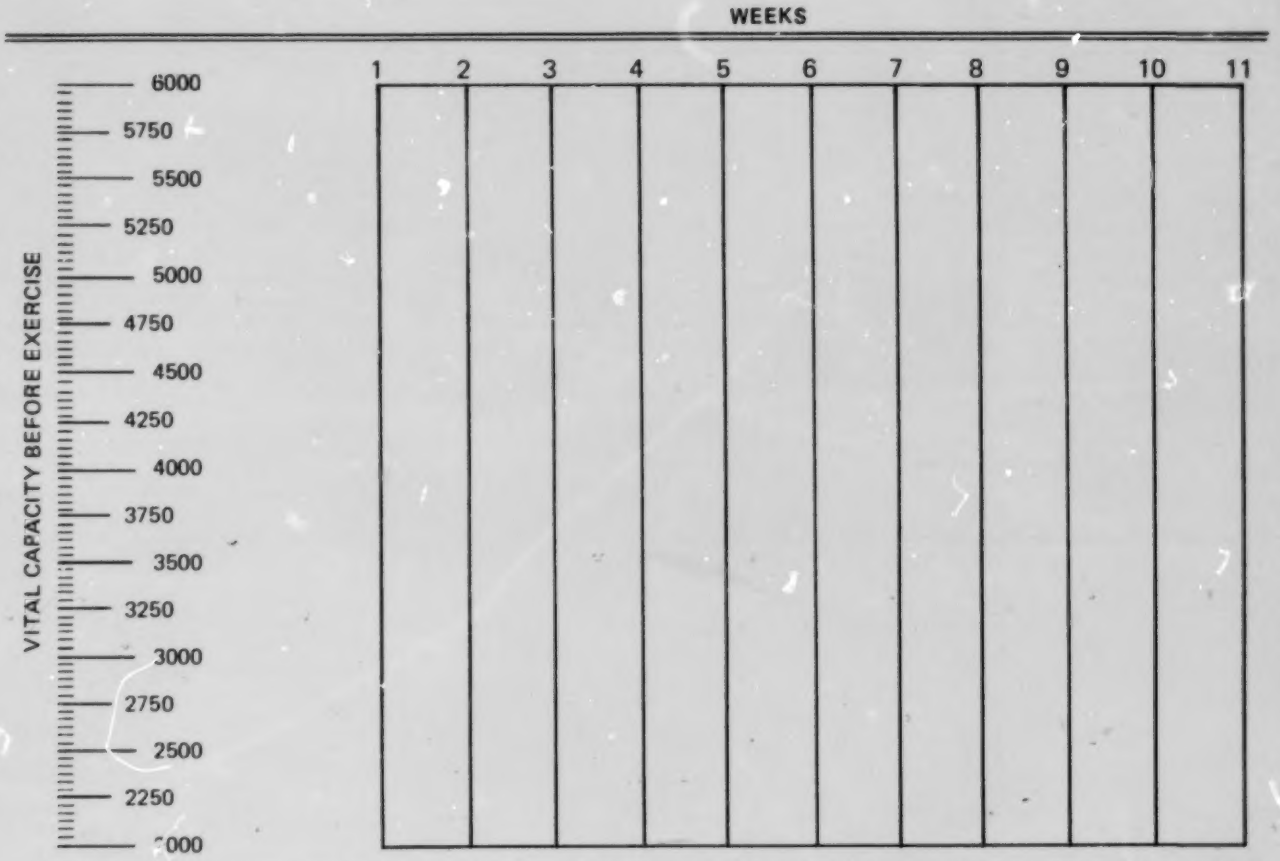
VITAL CAPACITY: DRY SPIROMETER CHART[1]

EXPIRATION TEST FOR ASTHMA PATIENT

FORCED EXPIRATION VOLUME CHART

NAME _____ AGE _____

SCHOOL _____ GRADE _____



Note: The forced expiration volume is achieved by having the standing patient take a deep breath and then exhale as slowly as possible into the mouthpiece of the wet spirometer. Be sure the subject keeps both nostrils closed and does not let any air escape around the outer edges of the mouthpiece.

	Test Date	Pre-Test VC	%	Post-Test VC	Exercise Circuits
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

[1] Ron Adams, University of Virginia Hospital, Charlottesville, Virginia. Permission to publish granted.

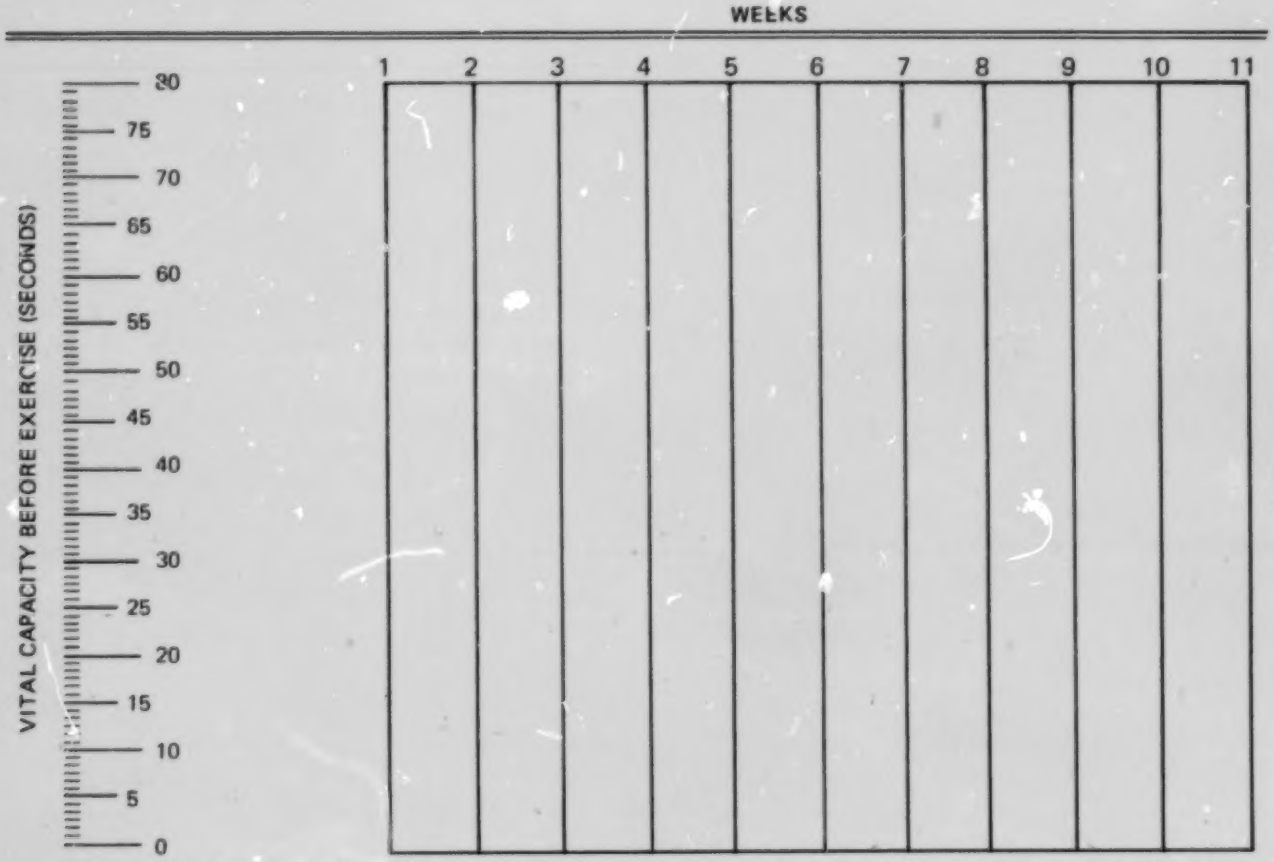
TABLE 2-3

VITAL CAPACITY: HISSING TEST CHART[1]

EXPIRATION TEST FOR ASTHMA PATIENT
FORCED EXPIRATION VOLUME CHART

NAME _____ AGE _____

SCHOOL _____ GRADE _____



Note: The forced expiration volume is achieved by having the standing patient take a deep breath and then exhale as slowly as possible through pursed lips. The teacher records expiration volume in seconds. Be sure the subject keeps both nostrils closed and expirates only through the pursed lips.

	Test Date	Pre-Test VC	Post-Test VC	Exercise Circuits
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

[1]Modification of the form designed by Ron Adams, University of Virginia Hospital, Charlottesville, Virginia.

TABLE 2-4

CARDIORESPIRATORY ENDURANCE CHART

Name _____ Age _____

School _____ Grade _____

Event	Raw Score	%	Raw Score	%	Raw Score	%	%	+
200 Yard Run	____	____	____	____	____	____	____	____
8-Minute Run	____	____	____	____	____	____	____	____
12-Minute Run	____	____	____	____	____	____	____	____
Dates	____	____	____	____	____	____	____	____

Self-concept, pictorial scale. Student scores are to be recorded on Table 2-5. Determine the subject's self-concept score as follows:

Mean ($\bar{X}$) of Not Like Me minus Mean ($\bar{X}$) of Like Me + 50.[1]

School sentiment index: secondary level. Scores may be obtained by assigning points (4, 3, 2, or 1) to each response, as indicated on the scoring template. "Yes" or "no" responses which receive 4 points are those which indicate:

1. A favorable attitude toward aspects of teacher behavior (teacher subscale).
2. An expressed tendency to approach rather than avoid learning-related activities (learning subscale).
3. A favorable attitude toward the social structure and climate of one's school (school social structure and climate subscale).
4. A favorable attitude toward peer relations in the school context (peer subscale).
5. A favorable attitude toward the general notion of "school" (general subscale).

For hand scoring, scoring templates may be prepared by punching out the holes marked on the scoring guide (for all items or for only those items in the subscale(s) of interest). The template may then be placed over the student's response sheet and point values recorded for responses appearing through the punched holes.

Average scores for a group of students for the entire measure or for a particular subscale may be computed by summing the scores for all pupils and dividing the number of pupils in the group. (See Appendix E for test questions, answer sheet and scoring template.)

Self-concept, wear attitude inventory. Student scores are to be recorded on Table 2-6. Form A and Form B statements and the scoring keys are located in Appendix F. Use Form A for pre-test. The students score is his total for the thirty items.

[1] The Project Director added the constant of 50 to the formula to maximize the attainment of a positive number.

TABLE 2-5

PICTORIAL SELF-CONCEPT SCALE SCORE SHEET

Item	Card Value	Like Me	Sometimes Like Me	Not Like Me
1	8.1			
2	43.8			
3	30.8			
4	37.9			
5	14.1			
6	18.3			
7	17.1			
8	18.4			
9	14.1			
10	31.1			
11	12.5			
12	40.1			
13	45.4			
14	38.1			
15	35.4			
16	9.9			
17	2.1			
18	44.4			
19	11.5			
20	10.9			
21	22.5			
22	39.4			
23	15.0			
24	45.4			
25	40.1			
26	34.4			
27	38.5			
28	39.8			
29	37.5			
30	39.5			
31	39.6			
32	13.8			
33	15.9			
34	12.3			
35	14.5			
36	18.5			
37	16.9			
38	15.3			
39	15.4			
40	13.9			
41	37.3			
42	13.1			
43	25.0			
44	16.6			
45	37.0			
46	10.3			
47	32.4			
48	6.1			
49	45.1			
50	40.4			
	Total=			
	No.=			
	Average=			

Definitions:
Item – number on pictorial card.

Card Value – as determined by eight judges. Low value-positive. High value-negative.

Like Me; Sometimes Like Me; Not Like Me. Determined by card placement during test.

Totals – determined by adding the card values for cards placed in each column.

No. – number of cards placed in each column.

Average – Total of each column card values divided by number of cards placed in that column.

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(Permission to publish granted.)

Name _____

Score = ($\bar{X}$ of Not Like Me Col.) minus

($\bar{X}$ of Like Me Col.) + 50

High score = positive self-concept.

TABLE 2-6

WEAR ATTITUDE INVENTORY SCORE SHEET

FORM A & FORM B (CIRCLE ONE)

PRINT FULL NAME _____ GRADE _____ DAYS & PERIOD _____ DATE _____ INSTRUCTOR _____

	N*	VALUE		N	VALUE
5			2		
4			1		
3			TOTAL		

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	( )	( )	( )	( )	( )
2.	( )	( )	( )	( )	( )
3.	( )	( )	( )	( )	( )
4.	( )	( )	( )	( )	( )
5.	( )	( )	( )	( )	( )
6.	( )	( )	( )	( )	( )
7.	( )	( )	( )	( )	( )
8.	( )	( )	( )	( )	( )
9.	( )	( )	( )	( )	( )
10.	( )	( )	( )	( )	( )
11.	( )	( )	( )	( )	( )
12.	( )	( )	( )	( )	( )
13.	( )	( )	( )	( )	( )
14.	( )	( )	( )	( )	( )
15.	( )	( )	( )	( )	( )
16.	( )	( )	( )	( )	( )
17.	( )	( )	( )	( )	( )
18.	( )	( )	( )	( )	( )
19.	( )	( )	( )	( )	( )
20.	( )	( )	( )	( )	( )
21.	( )	( )	( )	( )	( )
22.	( )	( )	( )	( )	( )
23.	( )	( )	( )	( )	( )
24.	( )	( )	( )	( )	( )
25.	( )	( )	( )	( )	( )
26.	( )	( )	( )	( )	( )
27.	( )	( )	( )	( )	( )
28.	( )	( )	( )	( )	( )
29.	( )	( )	( )	( )	( )
30.	( )	( )	( )	( )	( )

*Example:	N	VALUE
5	⧻	25
4	II	8

TAPE ASSESSMENT PROCEDURES

CHAPTER THREE

TASSESSMENT PROCEDURES

The assessment of student performance is the second step in the individualization of an aerobic activity program. Individual strengths and weaknesses can be determined only by the proper diagnosis of pupil performance.

Unfortunately, teachers are taught to diagnose performance almost solely on the basis of "product" information (test score) but lack the observational skills to focus on the "process" information provided by the child, (namely, *how* he performs the specific task).

The Project ACTIVE Teacher Training Program incorporates both appraisal strategies – objective and subjective. Teachers are trained to assess "product" and "process" information so that they can compile a complete "picture" of each child's performance. This chapter provides a systematic procedure for assessing pupil progress effectively and efficiently.

OBJECTIVE APPRAISAL

Vital Capacity

Tables 2-2 and 2-3 on pages 8 and 9 provide a place to record post-activity scores. Pre-activity scores are plotted to denote weekly progress; post-activity scores are plotted to indicate the activity tolerance level of each child. For example, a student who registers 2200 cc's before and 2400 cc's after exercise can be provided additional tasks during subsequent sessions since he did not exceed his pre-activity tolerance limits. Thus, the teacher should insure that the student records *two* scores for each session and note the pre- and post-test differences resulting from the intervening exercise routine. Additionally, the student should record his pre-test percentile score by referring to Table 3-1.[1] While the primary purpose of the pre-test is to provide the teacher with baseline information, he should review the percentile scores so that he can note the student's performance in relation to other students his age. **Note**: Appendix G provides VC norms for adults.

[1] To date, norms have not been established for the hissing test.

TABLE 3-1

DRY SPIROMETER NORMS[1]

FACTOR: Vital Capacity
TEST ITEM: Dry Spirometer

GIRLS

n=	57	52	51	52		62	63	60	46
Age	6	7	8	9		10	11	12	13
					Percentile				
	2000	2500	2000	2500	99	2800	3600	3000	4000
	1900	2500	2000	2500	96	2800	3300	3000	3700
	1700	2000	1800	2300	90	2700	3000	2800	3600
	1500	1700	1600	2100	80	2600	2800	2700	3400
	1500	1600	1600	2000	75	2500	2700	2500	3400
	1500	1600	1600	1800	70	2500	2700	2500	3200
	1400	1500	1500	1800	65	2500	2600	2500	3200
	1400	1500	1500	1700	60	2400	2500	2400	3100
	1300	1400	1400	1700	50	2300	2400	2300	3000
	1100	1400	1300	1600	40	2200	2300	2200	2700
	1100	1300	1300	1600	35	2100	2200	2100	2700
	1000	1300	1300	1500	30	2000	2200	2000	2700
	1000	1300	1300	1500	25	2000	2200	2000	2600
	1000	1200	1200	1400	20	1800	2000	1900	2500
	900	1000	1100	1200	10	1600	1900	1700	2300
	700	900	1000	1200	4	1500	1700	1600	2300
	600	900	1000	1000	1	1200	1600	1600	2100

MEASURED IN CUBIC CENTIMETERS

Cardiorespiratory Endurance

Percentile scores for cardiorespiratory endurance are located in Table 3-2. The teacher should make note of the student's raw score and his score in relation to the other students in his age category.

Self-Concept, Pictorial Scale

The initial score only provides baseline information as no norms are presently available for students with breathing problems. However, the initial score is to be compared with the post-test score so that pupil change in self-concept can be noted.

School Sentiment Index and Self-Concept, Wear Attitude Inventory

The same interpretations are recommended as for the Pictorial Scale as no norms are available.

[1] (Courtesy of the Township of Ocean School District)

TABLE 3-1 (Continued)

PHYSICAL FITNESS TEST NORMS

FACTOR: Vital Capacity

TEST ITEM: Dry Spirometer

BOYS

n =	45	45	52	63		51	58	51	50
Age	6	7	8	9		10	11	12	13
					Percentile				
	2300	2400	2400	3700	99	3400	3600	3200	4800
	2200	2100	2400	3000	96	3300	3600	3200	4300
	2000	2100	2200	2800	90	3200	3400	3000	3600
	1700	1900	2100	2500	80	2900	3200	2800	3300
	1500	1800	2000	2400	75	2800	3200	2700	3200
	1500	1800	2000	2300	70	2800	3100	2700	3000
	1500	1700	2000	2200	65	2700	3000	2600	3000
	1400	1700	1900	2200	60	2700	3000	2600	3000
	1300	1700	1700	2100	50	2600	2800	2500	2800
	1200	1600	1600	2000	40	2500	2700	2300	2700
	1200	1600	1500	2000	35	2500	2600	2300	2600
	1100	1600	1500	1800	30	2400	2600	2200	2500
	1100	1500	1500	1800	25	2200	2500	2200	2500
	1000	1500	1400	1800	20	2200	2400	2000	2500
	900	1300	1300	1600	10	2100	2200	1900	2300
	900	1200	1200	1500	4	1800	2000	1700	1900
	900	1100	1000	1200	1	1800	1700	1700	1900

	GIRLS					BOYS			
n =	66	71	124	61		59	50	50	50
Age	14	15	16	17		14	15	16	17
					Percentile				
	4100	4600	4400	5800	99	4500	5900	5600	6100
	4000	4300	4300	4500	96	4100	5500	5000	5800
	3900	3800	4000	4000	90	3900	5100	4900	5500
	3500	3700	3700	3900	80	3600	5000	4700	5200
	3500	3600	3600	3800	75	3500	4600	4700	5200
	3500	3500	3500	3800	70	3500	4600	4600	5000
	3300	3500	3500	3600	65	3500	4500	4500	5000
	3200	3500	3400	3500	60	3400	4500	4400	4800
	3000	3200	3200	3500	50	3300	4400	4400	4600
	2900	3000	3200	3400	40	3200	4000	4200	4500
	2900	3000	3100	3300	35	3100	3900	4000	4400
	2700	2900	3000	3200	30	3000	3800	3900	4400
	2600	2600	3000	3200	25	3000	3700	3800	4200
	2500	2500	3000	3200	20	2800	3600	3700	3900
	2400	2400	2700	3000	10	2500	3200	3500	3400
	2200	2000	2400	3000	4	2500	3000	3300	3200
	2100	1800	2300	2700	1	2300	3000	3000	3000

MEASURED IN CUBIC CENTIMETERS

TABLE 3-2

CARDIORESPIRATORY ENDURANCE NORMS[1]

200 YARD RUN (Recorded in seconds)

	MALE							FEMALE					
Ages:	6	7	8	9	10	11	%	6	7	8	9	10	11 N=143
	38	35	33	31	30	30	99	40	36	35	32	30	30
	39	37	35	32	32	31	96	41	38	37	33	32	33
	40	39	36	34	33	32	90	43	40	38	35	33	34
	42	40	37	35	34	33	80	45	43	40	38	35	36
	43	41	38	36	35	34	75	46	44	40	38	36	36
	44	42	38	36	35	34	70	47	44	41	39	36	37
	44	43	39	37	36	35	65	48	44	41	39	37	37
	45	43	39	38	36	35	60	48	45	42	40	37	38
	47	44	40	40	37	36	50	49	46	43	41	38	39
	49	45	42	40	38	37	40	50	47	45	42	39	39
	50	46	43	41	38	38	35	51	48	45	43	39	40
	51	47	43	42	39	38	30	53	49	46	43	40	41
	52	47	44	43	40	39	25	54	50	47	44	41	42
	53	48	45	44	41	40	20	55	51	48	45	42	43
	58	52	47	46	44	41	10	59	53	51	47	44	45
	65	55	49	50	47	44	4	66	56	55	49	50	49
	66	56	59	51	48	47	1	67	57	56	50	51	51

SUBJECTIVE APPRAISAL

Vital Capacity

Teacher:

Observe student performance of exercising routine to detect any peculiarities such as inability to perform an exercise, labored breathing, etc. Meet with the school nurse, parent and particularly the student to gain some insight into the problem. Record vital information in the student's D&A folder; for example, medication taken, dosage, and time interval. Note whether subject is more distressed during changes in climate, and periods of varying degrees of excitement.

Student: Students working in pairs, testing vital capacity scores via the spirometer and "hissing" test. Maintain records of percentage gain in vital capacity, or expiration time.

Cardiorespiratory Endurance

Observe and record anecdotal remarks regarding "how" the student performed his running event. Did he walk, intersperse walking and running, or run the entire distance? Was his breathing labored? Does his performance vary with climatic conditions? Enter all pertinent remarks in your record book.

Self-Concept Pictorial Scale

Conduct an item analysis of each child's scoring on each card. A careful review will provide clues as to potential causes of a poor self-concept. Teacher-pupil discussion will provide additional information helpful in a total, meaningful assessment.

Self-Concept, Wear Attitude Inventory

Observe pupil performance during the activity period to note whether your subjective appraisal is consistent with the scores on his rating form.

[1]Courtesy of the Township of Ocean School District

TABLE 3-2 (Continued)

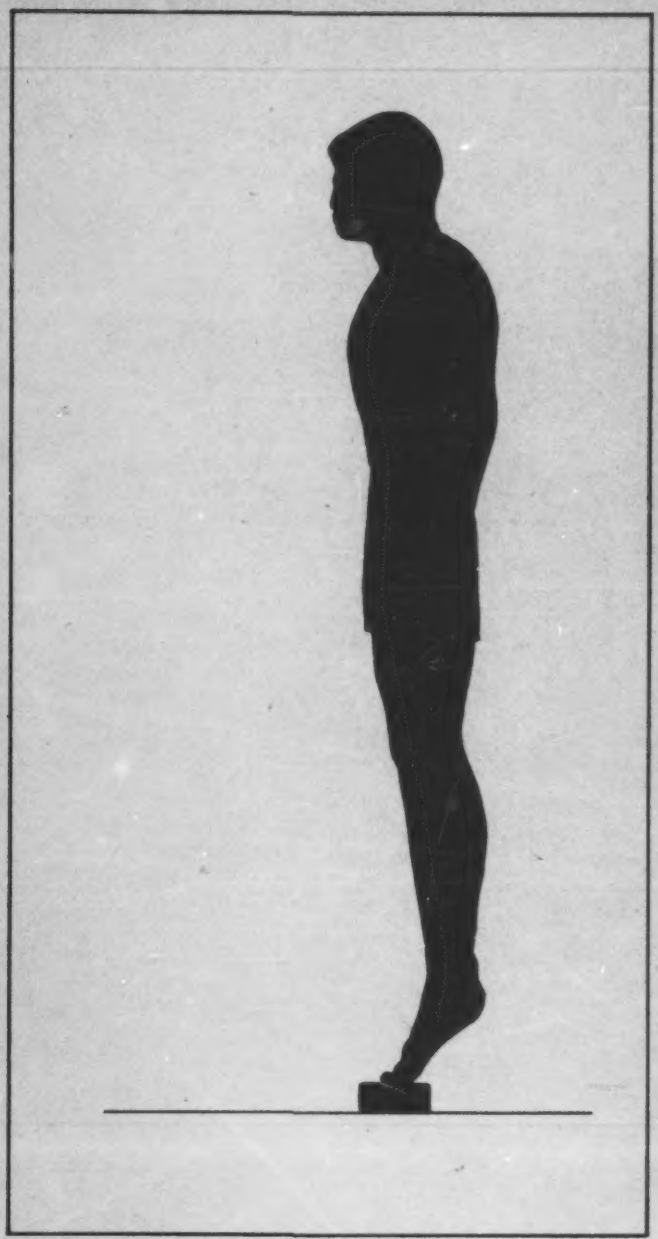
CARDIORESPIRATORY NORMS

8-MINUTE/12-MINUTE RUN[1]

	MALE							FEMALE						
AGE:	12	13	14	15	16	17	%	12	13	14	15	16	17	N = 175
	5.0	5.6	8.1	8.5	8.0	8.2	99	4.1	4.1	6.3	8.1	6.4	6.4	
	4.7	5.0	7.5	7.4	7.3	7.7	96	4.0	3.6	5.6	6.0	5.5	5.4	
	4.4	4.7	7.3	6.7	7.0	7.3	90	3.6	3.5	5.3	5.6	5.3	5.2	
	4.3	4.4	6.7	6.4	6.6	6.7	80	3.4	3.4	4.7	5.1	5.0	4.6	
	4.2	4.4	6.6	6.3	6.4	6.7	75	3.3	3.3	4.6	5.0	4.7	4.6	
	4.1	4.3	6.4	6.2	6.2	6.5	70	3.3	3.2	4.6	4.7	4.7	4.3	
	4.0	4.2	6.4	6.0	6.1	6.3	65	3.2	3.1	4.3	4.7	4.5	4.3	
	4.0	4.2	6.3	5.7	6.0	6.3	60	3.2	3.1	4.2	4.7	4.4	4.3	
	3.7	4.1	6.0	5.7	5.7	6.0	50	3.1	3.0	4.0	4.5	4.3	4.1	
	3.5	4.0	5.7	5.4	5.6	5.7	40	3.0	2.7	3.7	4.3	4.2	4.0	
	3.4	3.7	5.5	5.3	5.5	5.6	35	3.0	2.7	3.7	4.2	4.1	4.0	
	3.4	3.6	5.4	5.2	5.3	5.4	30	2.6	2.6	3.5	4.1	4.0	3.7	
	3.2	3.5	5.3	5.1	5.2	5.1	25	2.6	2.5	3.3	4.1	4.0	3.7	
	3.1	3.4	5.2	4.7	4.6	4.7	20	2.4	2.4	3.0	4.0	3.7	3.7	
	3.0	3.3	4.6	4.3	4.2	4.6	10	2.3	2.4	2.7	3.6	3.5	3.4	
	2.7	3.0	3.7	3.6	3.6	3.5	4	2.2	2.1	2.0	3.1	2.5	3.2	
	2.4	2.4	3.4	3.1	3.0	3.0	1	2.1	1.7	1.9	2.1	1.3	2.4	

[1]Note: Measured in laps (440 yards) and 1/8's of a lap. (Thus, 4.0 reflects four complete laps; 3.7 reflects three complete laps, plus 7/8's of a lap.)

TAPE PRESCRIPTION PROCEDURES



CHAPTER FOUR

TAPE PRESCRIPTION PROCEDURES

Previous chapters have stressed the role that "testing" and "assessing" play in the process of individualizing instruction. Chapter IV shows the interrelationship between the diagnostic and prescriptive processes. The objective and subjective information gathered in Chapters II and III are the basis for continuing along the TAPE pathway.

IDENTIFICATION OF PRIORITY NEEDS

To prepare a prescriptive program for a pupil, the teacher must review all previous information gathered, determine the amount of time that should be devoted to each deficiency manifested, and prescribe those tasks and activities that will ameliorate the deficiencies.

Prescription

Vital capacity. Prescribe exercises only after careful objective and subjective appraisal. Have the subject perform one "circuit" of the exercise program cited below.[1] If the post-test vital capacity score is the same as, or exceeds, the pre-test score, increase the number of circuits to be performed for the next meeting to two. Similarly, the teacher can devise a circuit of exercises from the deep breathing exercises recommended by Adams, Daniel and Rullman, presented in Chapter VI.[2]

Exercise Program: Diagrams and descriptions on the following pages.

1. Standing Breathing with Arm Swing (20 times)
2. Bicycle Exercise (moderate speed – 30 seconds)
3. Toe Stand Inhale-Exhale (20 times)
4. Chest Breathing-Supine Position (20 times)
5. Running in Place (50 counts of the right foot)
6. Sitting Toe Touch (20 times)

Objectives:

1. Breathing exercises increase expiration and thus lessen bronchial spasm.
2. They prevent postural defects such as narrowed chest and kyphosis.
3. They strengthen the auxiliary breathing muscles. (Scaleni, pectorals, abdominals)
4. They contribute to a relaxation program.
5. The test is a conditioning agent as well as a means of evaluation.
6. It provides additional steps for monitoring convalescence of patient by measuring overall expiration efficiency.
7. The test can be used for experience home or at school.
8. An increase in forced expiration volume will indicate a positive step toward lessening the severity of the pulmonary condition (asthma).
9. The test is a progressive developmental activity designed to increase tolerance so that a child can take part more normally in play activities.
10. Exercise restores the confidence of the patient and lessens his fear during an attack.

---

[1] Ron Adams, "Special Exercise Program for the Asthmatic Child," Permission to publish granted.

[2] Ronald C. Adams, Alfred N. Daniel and Lee Rullman, *Games Sports, and Exercises for the Physically Handicapped*, pp. 229-30.

Precautions:

1. Avoid fatigue.
2. Make sure child doesn't take part in any vigorous activities immediately prior to taking exercise.

Chart Tabulation: (Refer to pp. 13-14 for Chart illustrations)

1. Each curve test chart should include the vital capacity (VC) score.
2. The day of each VC count should be recorded on the outside right border of the chart.

Scoring the Expiration Test:

1. The test is scored satisfactory if the patient's VC is increased daily.
2. Gradual daily increase in VC proves that exercise program is a positive step toward lessening the severity of the pulmonary condition.

Exercise Procedures:

1. Patient must assume standing position, flexed at waist.
2. Resting vital capacity is taken. Patient is allowed three trials and the best score is tabulated on VC curve chart.
3. Execution of six listed exercises. No rest period allowed between each exercise.
4. Patient returns to the standing position.
5. Vital capacity is recorded from the wet or dry spirometer reading. Patient is allowed three trials and the best score is tabulated on the VC curve chart.
6. Curve chart line is drawn from VC exercise dot *before* to VC exercise dot *after*. A ruler is used to plot the VC curve line.
7. The date of the expiration test should be recorded on the outside right border of the chart.

Note: If the subject receives the same or a higher vital capacity score after exercise than before exercise, then it is permissible to repeat the exercise.

RECREATION THERAPY EXERCISE PROGRAM FOR THE ASTHMATIC PATIENT[1]

1. **Standing Breathing with Arm Swing.** Child standing, leans forward, arms dangling. Stretch arms overhead, rising to erect position on the toes, breathing in. Drop forward, breathing out through mouth, making a hissing sound. Relax. Repeat 20 times.

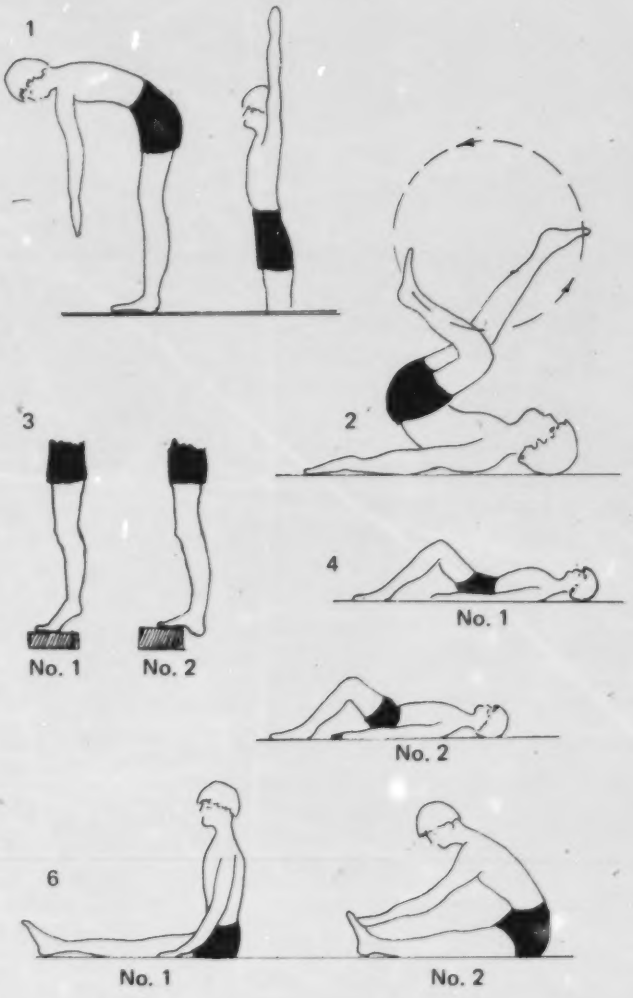
2. **Bicycle Exercise.** Child lies on back and makes circular motion with legs as if peddling a bicycle. Continue for 30 seconds.

3. **Toe Stand Inhale-Exhale.**
   1. Child stands on toes, using a book for foot support, and inhales.
   2. Exhales and relaxes by placing heel of feet on floor. Repeat 20 times.

4. **Chest Breathing Supine Position**
   1. Breathe in through nose, expanding abdomen, then chest.
   2. Breath out through mouth making a hissing sound lowering abdomen, then chest. Repeat 20 times.

5. **Running-in-place Exercise.** Child raises and lowers the feet far enough to clear floor. Child counts to 50, the number of right contacts only. No diagrams on this exercise.

6. **Sitting Toe Touch**
   1. Sit on floor, feet against wall, knees stiff; inhale.
   2. Touch toes with fingertips. Exhale. Repeat 15 times.



[1] Ron Adams, "A Physical Conditioning Exercise for the Asthmatic Patient." (Permission to publish granted.)

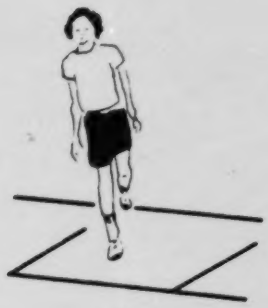
Cardiorespiratory endurance. The primary function of *vital capacity exercises* is to teach the student how to breathe deeply and to develop the musculature in the abdominal area so that a greater volume of air can be expelled from the lungs. *Cardiorespiratory endurance exercises* serve a different function – to increase the tolerance of the body to perform strenuous activities by improving the functioning cardio, pulmonary and vascular systems.

After recording the child's running scores and anecdotal remarks, the teacher should meet with the student and discuss the planned program. It must be made very clear that the STUDENT will always make the final decision regarding the *duration* and *strenuousness* of the activities. The teacher, however, should explain the physiological theory of "use and disuse" and the need to perform tasks that are increasingly demanding.

Regardless of the activities prescribed, it is recommended that the "overload" principle be applied – a training technique used to systematically increase a subject's tolerance level by modifying the activity duration time, repetitions, or the stress of the task(s) to be performed. For example, a student may be requested to perform a series of exercises as follows:

Time Duration: 10 Minutes
Exercise Format: Circuit Training
Procedure: Perform
1. 50 hops on left foot
2. 50 hops on right foot
3. 50 jumps, both feet
4. 50 "Spot running" (running in place)
5. 50 "Jumping Jacks"

1.
Hop, left



2.
Hop, right

3.
Jump, both feet

4.
Spot Running

5.
Jumping Jacks

Fig. 4-1 Circuit Training Routine

The routine can be more or less demanding – depending upon the prescription desired. The time may be kept constant and the demands on the child can be increased or decreased by increasing or decreasing the number of repetitions. Or, the time may be increased and the repetitions kept constant. Further, overload can be incorporated by increasing the difficulty of the task to be performed, e.g., "curling" a 50-lb. barbell ten times as opposed to "curling" a 25-lb. barbell ten times.

The initial prescription should require minimal effort, thus assuring success. Thereafter, a reasonable goal should be established and, once achieved, should be made slightly more demanding. For example, the initial goal for the routine in Figure 4-1 might be one complete circuit in the ten-minute period. Once achieved, the goal might be revised to 1.4, i.e., the performance of one circuit, plus the two hopping exercises in the same period.

Caution: Despite the student's involvement in the determination of his exercising routine, the teacher is responsible for his well being and must be constantly alert and ready to lessen the demands of the program if the situation warrants the change.

Modified games and activities. Have the student participate in modified games and activities. Modify the experiences in accordance with his tolerance level. Structure all activities so that the "overload principle" (tasks that are increasingly demanding) are incorporated. **Note:** To avoid overfatigue, or the onset of a "breathing attack," be sure that all prescriptions are approved by the student. Inform him that he is to stop at any time when he feels the activity is too demanding.

Student learning experience. Have the students design their own circuit of exercises that include deep breathing, and keep a record of their progress in terms of vital capacity scores.

PROGRAM IMPLEMENTATION

In addition to the TAPE procedure discussed in this manual, many other factors enter in the implementation of a successful individualized program. For example, "What is the role of the teacher in this highly structured environment?" "How can one motivate a student frustrated by a failure to accomplish his tasks?" "What other factors must be considered to enhance program success?" Such questions are considered in the remaining pages of this chapter.

The role of the teacher. To individualize instruction, the teacher must modify his teaching style so that he becomes a "partner" in the educational process. Instead of devoting the instructional time to lecturing and "telling" the students what to do, he must guide, assist, stimulate, motivate, and act as a resource person constantly. He must, in fact, make the student the "center" of the learning process. Instead of answering questions, the teacher skillfully guides the student through a series of questions so that he inductively arrives at the solution to his problem. Further, the teacher does not provide experiences which result in rote learning. All tasks and activities are designed to develop the child's ability to comprehend, apply knowledge previously learned, analyze problems, synthesize information, and intelligently arrive at solutions.

Strategies to motivate students. Assuming that all of the strategies listed above have been incorporated, will the students be motivated? Not necessarily. Consideration must also be given to "personalizing" instruction and providing "student learning experiences."

The terms "individualized instruction" and "personalized instruction" are not synonomous. As mentioned in Chapter I, the Project ACTIVE Training Program defines "individualized" in terms of the TAPE process – the focus is on instruction. "Personalized," – on the other hand, relates to teacher-pupil rapport – the focus is on the human element. Many highly innovative, individualized programs may have failed because they have lacked the personalization factor. Thus, it is recommended that throughout the breathing unit, the teacher constantly recognize each child as a human being with whom he must constantly strive to enhance his relations. Some techniques recommended to enhance personalization of instruction are:

1. refer to each pupil by his or her first name
2. look for opportunities to reinforce tasks performed reasonably well
3. structure all tasks so that every child can achieve a degree of success
4. empathize with each child in his performance and behavior
5. provide opportunities for each child to perform tasks he or she enjoys
6. structure all experiences so that each child is maximally involved.

Repeated learning experiences are necessary for the child to "internalize" the concept by creating the proper learning environment. The four tasks presented below serve a dual purpose: helping the child fully comprehend the values to be derived from the aerobics program; providing parameters for teacher and pupil roles.

Task No. 1:
Measure Vital Capacity, Grades 7-12.
Teacher's Role.

a. Explain the relationship of vital capacity to one's well-being.
b. Explain and demonstrate the use of the dry spirometer and the "hissing" methods of measuring vital capacity.
   Dry Spirometer Method:
   1. Student exhales through mouthpiece, keeping nos-

trils closed and lips pursed so that no air escapes around the mouthpiece.

2. Student exhales slowly and concludes by bending at the waist.
3. After three trials are taken, the best vital capacity score is recorded.

"Hissing" Method:

1. Same procedure as above except the air is expirated through pursed lips.
2. A stop watch is used to measure expiration times; the longest time period, of three attempts is recorded.

c. Pair students for testing purposes.
d. Distribute expiration test scoring sheets.
e. Assist students to insure accurate testing and scoring.

Student's Role.

a. Measure his own vital capacity, if the dry spirometer is used, time of his partner if the hissing method is used.
b. Record his best score.

Task No. 2:

Determine Personal Tolerance Limits and Improvement, Grades 7-12.

Teacher's Role.

a. Explain and demonstrate diaphragmatic breathing exercises.
b. Assist students to insure deep breathing.
c. Have students retake their vital capacity upon completion of the exercises.
d. Demonstrate procedure for ascertaining improvement.

Student's Role.

a. Perform the exercising regimen.
b. Remeasure vital capacity after exercising.
c. Determine his improvement. (Pre-test score minus Post-test score.)

Task No. 3:

Plan and Implement an Individualized Program, Grades 9-12.

Teacher's Role.

a. Explain procedure for increasing the stress of aerobic-type activities.
b. Post and explain a variety of activities that involve diaphragmatic breathing.
c. Structure the class period so that each student can perform his exercises.
d. Observe each student to insure that he does not exceed his tolerance limits.
e. Be sure each student's medical approval form is on file.

Student's Role.

a. Keep a daily log of vital capacity scores.
b. Continue to perform one "circuit" of the exercises as long as his post-test scores are *less than* pre-test scores.
c. Increase circuits (by one) whenever post-test scores are *equal to or greater* than pre-test scores.
d. Use common sense when performing exercises. For example, if he does not feel well, or is bothered by climatic conditions, he should restrict his program accordingly.
e. Participate in other endurance-type activities after school and on weekends.
f. Keep an anecdotal record of other pertinent information such as dates and severity of "attacks," increase or decrease in medical dosage, etc.

Task No. 4:

Develop a Circuit of Aerobic Exercises or Activities that Utilize the Overload Principle, Grades 7-12.

Teacher's Role.

a. Define and explain "anaerobic", "aerobic," "circuit training," "interval training," and "overload."
b. Establish a circuit, demonstrate each exercise, and vary the time, repetitions, and stress factors so the student understands how he can vary the intensity of his program.
c. Demonstrate recording procedure and suggested guidelines for overloading.

Student's Role.

a. Develop an original circuit of tasks for a 15-minute period.
b. Record the time, repetitions, and descriptions of each task.
c. Record the planned procedure for increasing the strenuousness of the activity.

All of the above experiences will enhance the child's self-concept if tasks and activities are both structured to insure success and supported by immediate, positive reinforcement.

Structuring the learning environment. Establishing a program to meet the varied needs of any group of students requires the restructuring of the traditional gymnasium or classroom setting. It is recommended that several mini-instructional centers be set up within the gymnasium or classroom as seen in Figure 4-2. This affords the teacher flexibility in programming whereby he can prescribe individualized and/or group activities within the same environment.

Other factors to be considered. Record keeping poses a problem for the teacher. It is recommended that the teacher prepare an individual folder for each child in which are filed all test forms. Further, to minimize prescriptive error, some form should be devised so that tasks, time duration, attendance, and anecdotal remarks can be recorded on a daily basis. The Individual Participation Card (Table 4-1) provides one form that can be used for record-keeping. The reverse side of the 5 x 8 card can be kept blank for entering anecdotal remarks. Other considerations would include teacher-pupil ratio (1-10), size of

the teaching station (30' x 60'), supply and equipment needs (see to Appendix H), and time allotment for the program (a minimum of three thirty-minute periods per week).

Sample lesson plan. John Doe is enrolled in an adapted physical education class. He is scheduled for a thirty-minute class period on Mondays, Wednesdays and Fridays. Each period is designed so that John receives fifteen minutes of individualized instruction and fifteen minutes of group activity designed to reinforce his strengths and to develop social interaction and emotional growth. A copy of John's program is presented below:

Period 1 30 Min.	Monday, Wednesday and Friday
Individual Activity	**Time Prescription**
Diaphragmatic Breathing Exercises	5 minutes
Aerobic Circuit	10 minutes
Group Activity	
Coed Volleyball	15 minutes

SUMMARY

The implementation of an individualized instructional program to ameliorate breathing problems requires a close working relationship between the physical educator, the school nurse, and the family physician. The following suggestions will aid the teachers in attaining that important goal.

1. Obtain parental and medical approval for student involvement in the adapted physical education program.
2. Obtain a list of approved physical activities.
3. Meet with the student and the school nurse to discuss medication, the effects of varying climatic conditions on physical performance, and other pertinent information.
4. Administer appropriate pre-test instruments to gather additional baseline information.
5. Prescribe an instructional program based on the data collected.
6. Counsel the student and explain the values to be derived from participation in the recommended exercises.
7. "Mainstream" the student in the regular physical education classes (when the activity and environment are appropriate).

STATION NO. 1

Activity: Breathing Exercises
Factor: Vital Capacity

STATION NO. 2

Activity: Aerobics Circuit
Factor: Cardiorespiratory Endurance

STATION NO. 6

Activity: Stationary Bicycle Riding
Factor: Muscular Endurance

STATION NO. 3

Activity: Rope Skipping
Factor: Cardiorespiratory Endurance

STATION NO. 5

Activity: Obstacle Dribbling
Factor: Endurance/Ball-handling

STATION NO. 4

Activity: Alternate Hand Lay-ups
Factor: Endurance/Accuracy

Fig. 4-2

MINI-TEACHING STATIONS

TABLE 4-1

INDIVIDUAL PARTICIPATION CARD

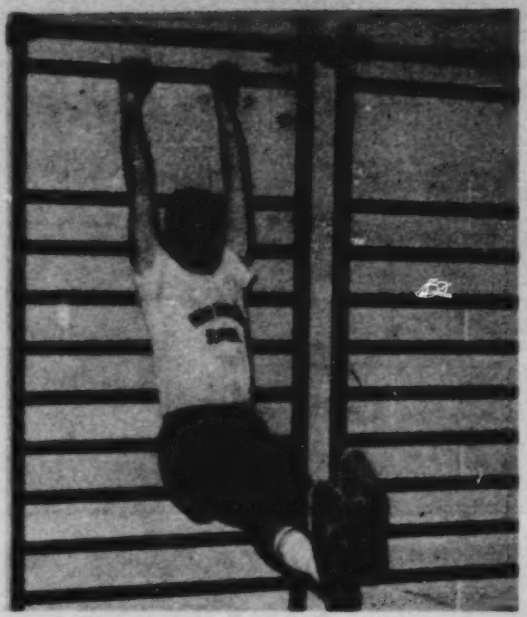
(Courtesy of the Township of Ocean School District.)

Name_____ Day_____ Period_____ Instructor_____ School_____

SOMATOTYPE_____ **CLASSIFICATION**_____

Motor Skills		**Participation Time (Minutes)**													
Bilaterality	3														
Balance and Postural Orientation	4														
Eye and Hand Coordination	2														
Eye and Hand Accuracy	2														
Ocular Pursuits	2														
Eye and Foot Accuracy	2														
Physical Fitness															
Arm/Shoulder Strength	5														
Abdominal Strength	3														
Explosive Leg Power	2														
Cardiorespiratory Endurance	5														
Dates	9/30														
Handedness R L Footedness R L															
Anecdotal Remarks															

TAP
EVALUATION PROCEDURES



CHAPTER FIVE

TAP EVALUATION PROCEDURES

Previous chapters have focused on gathering baseline information, assessing performance and prescribing activities. Chapter V is devoted to evaluating student progress at the end of a specific block of time so that a decision can be made regarding subsequent programming. (It should be noted that the term "assessment" implies the constant gathering of "process" information so that the prescription can be modified as needed. On the other hand, "evaluation" is viewed as the gathering of "product" (terminal) information so that an administrative decision can be made.)

The first section of Chapter V provides suggested guidelines for ascertaining whether a student should: (1) be returned to unrestricted program; (2) continue in the Adapted Program with the same prescription; (3) continue in the Adapted Program with a modified prescription; or (4) be scheduled in the unrestricted program and the Adapted Program.

SUGGESTED EVALUATIVE GUIDELINES[1]

To evaluate pupil progress properly, it is necessary to review all data collected. The evaluation should be conducted every nine weeks. At each terminal period, the teacher should:

1. Determine vital capacity progress
2. Readminister appropriate cardiorespiratory endurance test and record progress
3. Compare pre- and post-test incidence and severity of breathing attacks
4. Compare pre- and post-program medication dosage (if appropriate).

If a student's gains in the four areas cited above are significant (more than 30%), he should be referred to the family or school physician for possible program release. If gain scores are 10-30%, the recommendation should be "flexible" scheduling, i.e., scheduling the student so that he can be placed in the unrestricted program during activity units of moderate intensity and in the D&A program during strenuous activities or activities conducted out-of-doors during extreme climatic conditions. If gain scores are less than 10%, further evaluation is necessary. Attempt to discern whether the lack of improvement was attributable to improper prescription. If this is the case, determine why the prescriptive tasks did not improve performance. Were the tasks too easy, too difficult, not performed correctly, or not practiced sufficiently? Represcribe to correct the problem. If the problem is attributable to poor motivation, then prescribe other tasks which may be more appealing to the student. (See Chapter VI for a variety of tasks.) Other approaches to solving the motivation problem: make the exercises more meaningful by having students test one another; record their daily progress; and use other comparable strategies which enable the pupils to note the concrete benefits derived therefrom.

It is also very possible that the breathing difficulty is emotional rather than physiological in origin. Thus, the teacher should counsel the student and endeavor to determine the underlying cause(s). If the problem seems complex, the child should be referred to the school physician or school psychologist for further counseling.

If the student has only achieved minimally, but shows steady progress, the teacher should continue the present prescriptive program for another nine weeks.

[1] The teacher should always recognize the fact that evaluation is a continuous process and cannot be restricted to a precise testing schedule. It might be advisable to retest a student prior to the pre-planned schedule because of his performance. An interim evaluation insures that the individual prescriptive process is being implemented to the fullest extent.

TABLE 5-1

ADAPTED PHYSICAL EDUCATION PARENTAL REPORT
Vital Capacity/Endurance Progress Profile

TEACHER COMMENTS

Your child has completed nine weeks in our Adapted Physical Education Program. He has made considerable improvement. Thus, it has been recommended to the school physician and your family physician that he be released from the program.

PARENTAL COMMENTS

PARENT'S SIGNATURE _____

PUPIL John Doe

GRADE 3 YEAR 1975

CLASSROOM TEACHER Miss Michele Bjelis

PARENT WISHES CONFERENCE YES ☐

NO ☐

Test Item	Pre-Test Your Child's Score Date: 9/75	Post-Test Your Child's Score Date: 12/75	District Norms 25th %	50th %	75th %
Vital Capacity					
1. Dry spirometer	1200 cc	2000 cc	1500 cc	1700 cc	2000 cc
Cardiorespiratory Endurance					
1. 200-yard run	51 sec.	39 sec.	44 sec.	43 sec.	40 sec.
2. 8-minute yard run	____	____	____	____	____
3. 12-minute yard run	____	____	____	____	____
Breathing Attacks					
1. Number per week	4	1			
2. Duration per attack	9 minutes	2 minutes			
3. Medication					
tablets per day	4	1			
teaspoons per day	____	____			

PUPIL PROGRESS REPORT TO PARENTS

It is important that parents be made aware of the progress of their child in the Adapted Physical Education Program. Table 5-1 provides a suggested format for reporting to parents. The form provides a means of indicating the progress the child makes in terms of each test item and factor. Provision is also made for parental comments and requests for a conference.

SUMMARY OF THE TAPE PROCESS

The sequence the teacher uses for individualizing instruction involves:

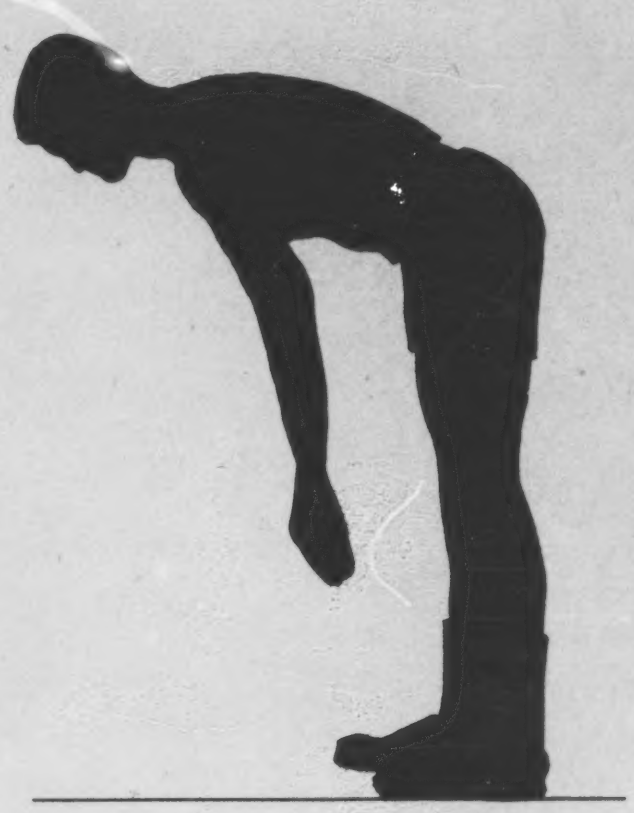
T Testing the student to gather baseline data

A Assessing the individual performance of the student

P Prescribing a sequentially developed program of individualized activities

E Evaluating student progress at periodic intervals

RESOURCE TASKS AND ACTIVITIES



CHAPTER SIX

RESOURCE TASKS AND ACTIVITIES

The diaphragmatic breathing exercises and cardiorespiratory endurance activities in this chapter have been provided as guidelines for working with children who display breathing deficiencies. It is anticipated that proper prescription and administration will result in gains that are twofold:

1. Strengthened abdominal musculature and proper breathing technique will increase the ability to expel air from the lungs, thereby easing breathing difficulties and minimizing the number and severity of breathing attacks.
2. More efficient and effective utilization of the heart, lungs and circulatory system will better equip the child with breathing problems to resist the deleterious effects of periods of anoxia, deficiency of oxygen.

The tasks and activities presented are suggested learning experiences to be supplemented with other similar but varying activities. The content of the task per se is not the sole essential. It is important that the teacher not only consider the content of the task but also match the selected tasks to each child's learning *style* so that each individual will achieve success.

VITAL CAPACITY

Deep Breathing[1]

1. Name: Tummy Flattener
   Equipment: Mat
   Description:
   - Supine position.
   - Hips and knees flexed.
   - Feet flat on floor.
   - Inhale through nose to maximum.
   - Hold briefly.
   - Exhale through mouth with hissing sound.
   - Repeat

   Teaching Hints:
   - Motivate students by "timing" exhalation phase

Fig. 1 Tummy Flattener

2. Name: Chest Expander
   Equipment: Mat
   Description:
   - Supine position.
   - Hips and knees flexed.
   - Feet flat on floor.
   - Place one hand on upper chest.
   - Place other hand on abdomen.
   - Inhale through nose and try to elevate the chest only.

[1] Exercises adapted from Ronald C. Adams, Alfred N. Daniel, and Lee Rullman, *Games, Sports and Exercises for the Physically Handicapped*, pp. 229-230. Permission to publish granted.

- Hold briefly.
- Exhale through mouth with hissing sound.
- Repeat.

Teaching Hints:

- Have students attempt to keep abdomen fairly still during exercise.

Fig. 2 Chest Expander

3. Name: Chest Squeeze, Hands
   Equipment: Mat
   Description:
   - Supine position.
   - Hips and knees flexed.
   - Feet flat on floor.
   - Place one hand on each side of ribs.
   - Inhale through nose, try to elevate chest only.
   - Hold briefly.
   - Exhale through mouth with hissing sound.
   - Push hands together during expiration.
   - Repeat.

   Teaching Hints:

   - Abdomen should remain fairly still during exercise.

Fig. 3 Chest Squeeze, Hands

4. Name: Chest Squeeze, Towel
   Equipment: Mat and Towel
   Description:
   - Supine position.
   - Hips and knees flexed.
   - Feet flat on floor.
   - Place folded towel around chest.
   - Cross arms across chest.
   - Grasp ends of towel.
   - Inhale through nose, try to elevate chest only.
   - Hold briefly.
   - Exhale through mouth with hissing sound.
   - Pull towel tight during expiration.
   - Repeat.

   Teaching Hints:

   - Endeavor to keep abdomen motionless.

Fig. 4 Chest Squeeze, Towel

5. Name: Chair Collapse
   Equipment: Chair
   Description:
   - Sit in chair.
   - Arms relaxed at sides.
   - Slowly flex at waist.
   - Exhale through mouth, as you flex body toward floor.
   - Hold briefly at maximum position.
   - Slowly sit up.
   - Inhale through nose.
   - Hold at sitting position.
   - Repeat.

   Teaching Hints:

   - Stress complete relaxation during the "Collapse" phase.

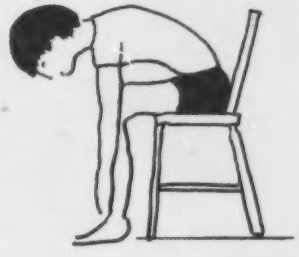


Fig. 5 Chair Collapse

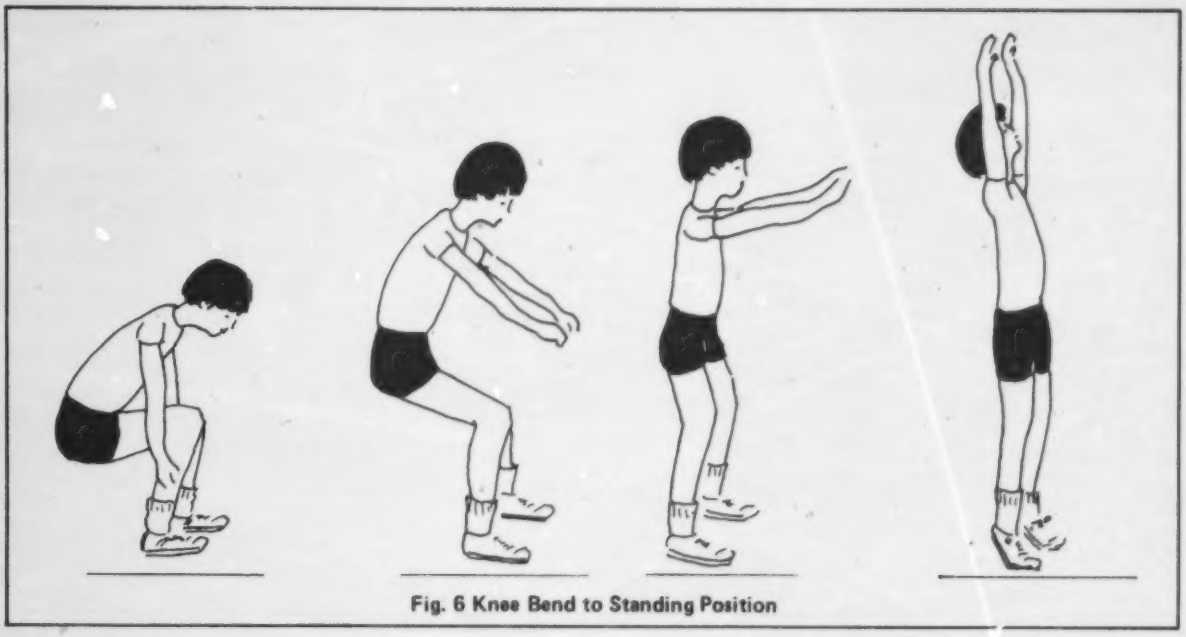


Fig. 6 Knee Bend to Standing Position

6. Name: Knee Bend to Standing Position[1]
   Equipment: None
   Description: The student assumes a 90° bent knee position. On command, he:
   - Slowly rises to a tall standing position (i.e., on tip toes with arms extended overhead).
   - Returns to the original "squat" position by gradually relaxing and collapsing all body parts.
   - Repeat.

   Teaching Hints:
   - Once the exercise is mastered, have the students inhale during the extension phase of the exercise and exhale during the relaxation phase.
   - Increase repetitions in accordance with each student's performance level.
   - Do not permit students to "squat" beyond 90° (to avoid possible knee injury).

7. Name: Balloon Keep-Up[2]
   Equipment: Balloons
   Description: Inflate and tie several balloons. Pair students (with one balloon to each pair). On command, each student with a balloon tosses it in the air and the game proceeds as follows:
   - Alternately, each student will blow the balloon toward his partner.
   - The student who touches the balloon with his hands or permits it to touch the floor loses one point, i.e., his partner gets one point.
   - The game terminates when one player scores 11 points.

   Teaching Hints:
   - Have students work individually until they master the skill of keeping the balloon in the air.

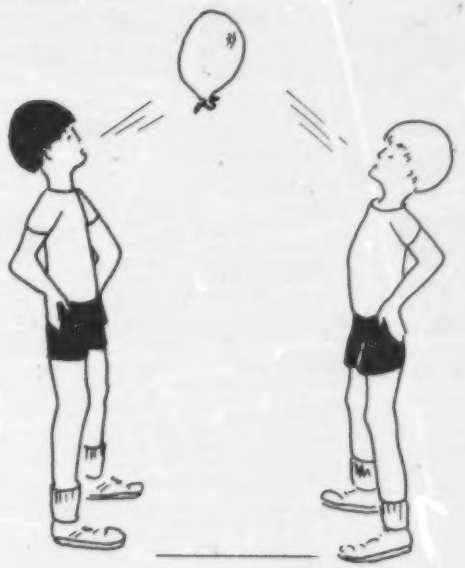


Fig. 7 Balloon Keep-up

- Modify the game by awarding points for getting the balloon above a certain height; rationale: will require maximum usage of breathing apparatus.

[1] Modified version of exercise included in Aileene Lockhart and Esther E. Pease, Modern *Dance*, p. 24.

[2] Modified version of a game developed by Fay Bennett Anderson, *Fay's First Fifty: Activities for the Young and Severely Handicapped*, p. 36.

ABDOMINAL STRENGTH

1. Name: Belly Dance
   Equipment: Mats
   Description: Have student lie on back, legs extended, place hands on abdominal wall, and contract muscles of the abdomen; then, relax muscles.
   Teaching Hints:
   - Concept to stress is that working muscles can be felt.
   - Vary task by performing in a standing position.
   - Place table tennis ball on abdomen and try to roll the ball off the stomach by contracting and relaxing the abdominal muscles.

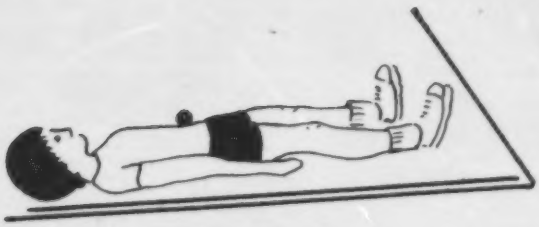


Fig. 1 Belly Dance

2. Name: Alternate Knee Bend
   Equipment: Mats
   Description: Have student lie on back with his legs extended and hands placed behind head. On command, have student:
   - Bring right knee up to chest.
   - Return to starting position.
   - Bring left knee up to chest.
   - Return to starting position.
   - Repeat.

   Teaching Hints:
   - Place hands on abdominal wall to feel muscles working.

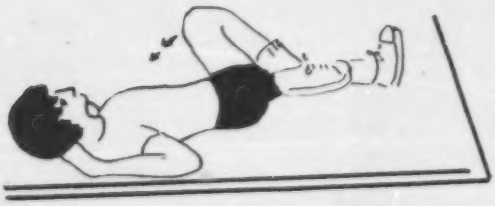


Fig. 2 Alternate Knee Bend

3. Name: Knee Bend
   Equipment: Mats
   Description: Have student lie on back, legs extended, and hands placed behind head. On command, have student:
   - Slide feet along mat or floor until heels touch buttocks.
   - Return to starting position.

   Teaching Hints:
   - Remind student to keep feet in contact with the floor and to keep lower black flat on the floor by rotating hips downward.

Fig. 3 Knee Bend

4. Name: Knee Raise
   Equipment: Mats
   Description: Have student lie on back, legs extended, feet together, heels on floor, with hands along side of the body. On command, have student:
   - Slide feet along the mat until heels touch the buttocks.
   - Bring knees to chest, keeping heels close to hips.
   - Raise hips by rounding back.
   - Hold position for three seconds.
   - Return to starting position.

   Teaching Hints:
   - Stress "tuck" rather than "arched" body position. Increase repetitions as abdominal strength improves.

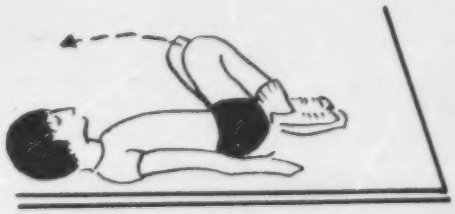


Fig. 4 Knee Raise

5. Name: Knee Circles
Equipment: Mats
Description: Have student lie on back, knees bent to chest, and hands behind head. On command, have student:
- Rotate knees in small circular pattern to the right.
- Reverse direction.
- Rotate knees in alternate circles.

Teaching Hints:
- If abdominal muscles are weak, have students wrap arms around knees to hold legs in position.
- Increase the size of the circles as abdominal strength increases.

Fig. 5 Knee Circles

6. Name: Leg Stretcher
Equipment: Mats
Description: Have student lie on back, knees bent, feet flat on mat, and hands behind the head. On command, have the student:
- Bring right knee to chest.
- Extend right leg to vertical position.
- Lower extended leg to the floor.
- Repeat exercise with the left leg.

Teaching Hints:
- Dorsiflex and plantar flex feet to stretch and contract lower leg muscles.

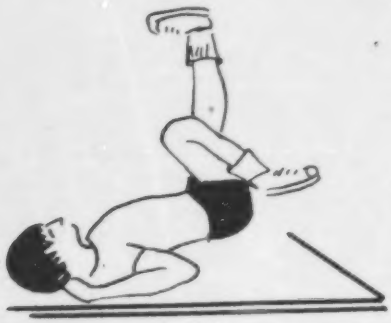


Fig. 6 Leg Stretcher

7. Name: Inclined Sit-Ups
Equipment: Inclined Board
Description: Have the student assume a supine position on the board. On command, have the student:
- Curl to sit-up position and touch toes.
- Return to the supine position.

Teaching Hints:
- Vary the exercise in accordance with the abdominal strength of the individual. A sample sequence might include: (board secured at the second notch).
- Practice until 10 curl-ups can be performed.
- Perform 10 sit-ups, with arms extended.
- Perform 10 sit-ups, with hands behind neck.
- Perform 10 cross-over sit-ups with a weight held behind the neck.
- Readjust the board to the third notch and repeat the sequence.
- Insure that students keep the knees in a flexed position throughout all exercises to minimize lower back strain.

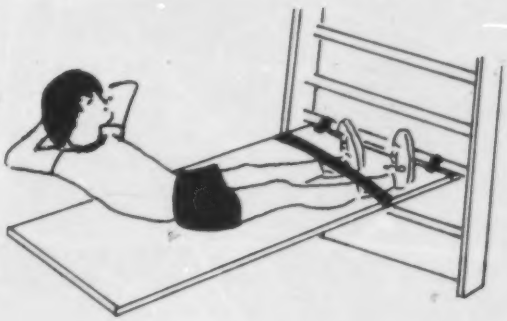


Fig. 7 Inclined Sit-Up

8. Name: Vee Sit-Up
Equipment: Mats
Description: Have the student assume a supine position on the mat, with arms and legs extended. On command, have the student:
- Raise upper torso and straighten legs simultaneously.
- Balance body weight on buttocks.
- Touch extended hands to toes, while maintaining balance.
- Return to supine position.
- Repeat.

Teaching Hints:
- A difficult task which requires considerable abdominal strength, coordination, and balance.
- Use the part-whole method. Have the students perform the component parts of the task until mastered before attempting the Vee sit-up.

Fig. 8 Vee Sit-Up

9. Name: Gather Sit-ups
   Equipment: Mats
   Description: Supine position on mats, with arms extended overhead. On command, have the students:
   - "Curl" upper torso forward, bringing arms toward toes.
   - Flex knees, with heels touching the buttocks.
   - Wrap arms around knees and squeeze.
   - Return to starting position.
   - Repeat.

   Teaching Hints:
   - When raising upper torso, have students roll the head, neck, shoulders, upper back, and lower back forward in that order. Reverse the process when returning to the supine position.
   - Encourage diaphragmatic breathing by having students inhale when moving to a sit-up position and exhaling during the "squeezing" phase of the exercise.

Fig. 9 Gather Sit-Up

CARDIORESPIRATORY ENDURANCE

1. Name: Marching-in-Place
   Equipment: None
   Description: Have the student stand at attention. On command, the student:
   - Marches-in-place, starting with the left foot.
   - Swings arms naturally.
   - Counts each time his left foot strikes the floor.
   - Stops when the teacher gives the command.

   Teaching Hints:
   - Vary the learning experience by: keeping the performance time and repetitions constant; increasing the time while keeping the repetitions constant.
   - Have the students march to music.
   - Observe performance and note bilaterality and/ or gross body coordination problems.

2. Name: Endurance Jumping
   Equipment: None
   Description: Have the student assume an upright standing position, with his arms at his sides. On command, the student:
   - Jumps repeatedly, feet together, until requested to stop.
   - Places fingers on carotid artery (under jawbone) and endeavors to locate pulse.

   Teaching Hints:
   - Explain the effects exercise has on the heart and circulatory system.
   - Add music to make the task more enjoyable.
   - Vary the repetitions according to individual capacities.
   - Vary the task by having the student jump forward, backward, and sideward, with feet together and apart.

Fig. 1 Endurance Jumping

3. Name: Endurance Hopping
   Equipment: None
   Description: Have the student assume the upright standing position, with his arms at his sides. On command, the student:
   - Hops on his left foot.
   - Hops on his right foot.
   - Hops, alternately, on his left and right foot.

   Teaching Hints:
   - The same suggestions as for "Endurance Jumping."

Fig. 2 Endurance Hopping

4. Name: Spot Running[1]
Equipment: Stop Watch
Description: Have the student assume the upright standing position, with his arms at his sides in the flexed position. On command, the student:
- Runs in place at varying speeds, for varying lengths of time.

Teaching Hints:
- Have the students change pace by telling them to imagine: they are running uphill, downhill, around a turn; or they are a racing car, horse, bus, truck, or a train.

5. Name: Running A Measured Distance
Equipment: Stop Watch, Measuring Tape
Description: Establish a measured distance. On command, the student:
- Completes the run as rapidly as possible.

Teaching Hints:
- Recommended distances: grades K-2 – 200 yards; grades 3-6 – 600 yards; grades 7-9 – one mile; and grades 10-12 – two miles.
- Add the competitive element by using team races, team relays, shuttle runs, and obstacle runs.

6. Name: Trot, Skip, Run[2]
Equipment: None
Description: Sub-divide the class into a series of teams aligned in line formation, facing the same direction. On command:
- The first student in each line begins trotting.
- The next student in each line begins trotting, when the first student has moved forward approximately eight feet.
- Repeat the same procedure until all students in each line have completed the task.
- When the first student of each line (the leader) has returned to the starting point, he or she begins again by skipping the entire distance.
- The other students replicate the skipping.
- The leaders will complete the third lap by running at full speed.

Teaching Hints:
- Have students select and include other types of locomotor skills.
- Identify and assist students who are having difficulty with any of the locomotor skills.

7. Name: Ski Slalom Run
Equipment: Stop Watches, Boundary Markers
Description: Arrange markers as per the illustration. Space the markers so that the total distance is 25-60 yards. On command:
- One student at a time runs the entire distance.
- Repeat until the entire class has a time recorded.

Teaching Hints:
- The instructor "times" each student.
- Vary the experience by conducting a continuous slalom (i.e., students traversing the course, keeping eight-foot intervals.

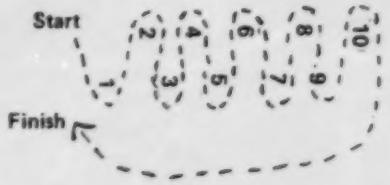


Fig. 3 Ski Slalom Run

8. Name: Follow the Leader[3]
Equipment: Record Player
Description: Place students in a circle formation (ten to a circle):
- A designated leader performs an exercise such as hopping.
- The other students in the circle replicate.
- When the instructor calls "change" the student to the left of the lead performs a different task.
- The other students replicate.
- Continue until all students have served as leaders.

Teaching Hints:
- Play a record that has a fast tempo to set the rhythm.
- Encourage the inclusion of tasks that involve the different parts of the body.

9. Name: Astronaut[4]
Equipment: None
Description: Have the entire class form one large circle. Select one student to serve as the chief astronaut; have him stand in the center of the circle.
- The chief astronaut calls No. 6 (or any number).
- All astronauts whose numbers are six respond by running counterclockwise around the circle (space), reentering the circle (the earth's atmosphere) at their original positions, and touching the chief astronaut's extended hand.
- The first astronaut to make contact becomes the new chief astronaut and calls a different number.

Teaching Hints:
- Vary the number of space revolutions before reentry is permitted.

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[1]Thomas M. Vodola, *Individualized Physical Education Program for the Handicapped Child*, p. 161.

[2]Orfalie Bryant and Eloise McLean Oliver, *Fun and Activities Through Elementary Physical Education*, p. 36.

[3]Charles B. Corbin, et al., *Concepts in Physical Education*, p. 61.

[4]Orfalie Bryant and Eloise McLean Oliver, *Fun and Activities Through Elementary Physical Education*, p. 51.

10. Name: Red and Blue [1]
Equipment: Flat Object, with each Side a Different Color
Description: Divide the class into two lines facing each other. Explain and demonstrate the game. Select a leader to toss the colored object.
- The leader tosses the object in the center area between the two teams.
- If the object lands with the blue side up, all members of the "blue" team turn and run home, pursued by the "red" team.
- If the object lands with the red side up, the procedure is reversed.
- All players tagged before returning home join the opposing team.
- The team having the most players in a predetermined time period wins.

Teaching Hints:
- Stress the importance of being careful to avoid injury.
- Use blue and red pinnies or vests, if available.
- If available, use flag belts to minimize arguments as to whether a player was tagged.

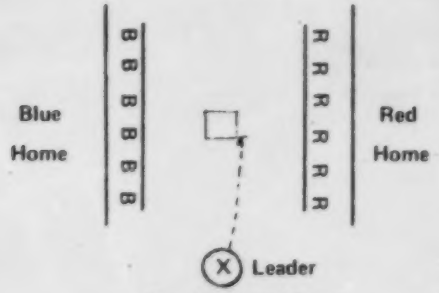


Fig. 4 Red and Blue

11. Name: Grab the Tire
Equipment: Car Tire
Description: Divide the class equally into two teams and assign a number to students on both teams. Place the teams at the opposite ends of the gym and the tire in the center.
- The instructor calls a number.
- The students with that number run to the center and try to drag the tire beyond their line.
- Score one point for each successful attempt.
- Continue until all numbers have been called.

Teaching Hints:
- Vary the game by calling multiple numbers (e.g., 2, 6, 10). In the example cited, six students would run to the center.
- Combine mathematics with the motor task. For example, state, "Those students whose numbers are a total of 3 + 5 run forward."

[1] Orfalie Bryant and Eloise McLean Oliver, *Fun and Activities Through Elementary Physical Education*, pp. 77-78.

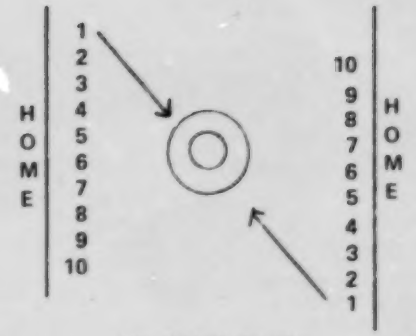


Fig. 5 Grab the Tire

12. Name: Windmill and Jog
Equipment: None
Description: Have the student assume a standing position, feet apart, with arms extended sideward at shoulder level. On command, the student:
- Bends and twists his trunk, touching his left hand to his right toe.
- Returns to the starting position.
- Jogs around the gym and returns to the original floor position.
- Repeats the task.

Teaching Hints:
- Vary the task according to the endurance capacity of each student.
- Identify and correct bilaterality and/or flexibility problems.

Fig. 6 Windmill and Jog

13. Name: Cycling and Jogging
Equipment: None
Description: Have student assume the inverted cycling position on the floor. On command, the student:
- Completes twenty-five leg cycles (a cycle is the rotation of both legs).
- Runs five laps around the gym.
- Returns to the original cycling position.
- Repeats the task.

Teaching Hints:
- Vary the leg cycles and distance to be run.
- Keep the time constant and record the number of "circuits" completed by each student.

- Stress the safety factor – avoiding contact with running classmates.

Fig. 7 Cycling and Jogging

14. Name: Mountain Climbing and Jogging
    Equipment: None
    Description: Have the student assume the starting position as in the illustration. On command, the student:
    - Reverses his foot position for thirty cycles.
    - Runs five laps around the gym.
    - Returns to the original starting position.
    - Repeats the task.

    Teaching Hints:
    - The same "hints" as cited in No. 14.

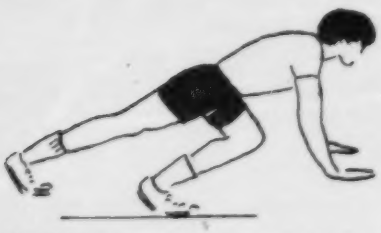


Fig. 8 Mountain Climbing and Jogging

15. Name: Jumping Jacks
    Equipment: None
    Description: Have the student stand with feet together and hands at sides. On command, the student:
    - Jumps and lands with feet apart.
    - Simultaneously, moves arms sideward and upward, touching hands overhead.
    - Returns to the starting position.
    - Repeats the exercise.

    Teaching Hints:
    - Vary the number of repetitions and cadence.
    - Increase the difficulty level by alternately having the student shift the feet sideward – together and staggered – together.
    - If a student cannot perform the task have him perform the discrete parts by the numbers.

Fig. 9 Jumping Jack

16. Name: Rope Skipping
    Equipment: Stop Watch, Jump Rope
    Description: Explain and demonstrate the proper rope skipping technique. On command, the student:
    - Skips rope for thirty seconds.
    - Rests for thirty seconds.
    - Repeats the exercise until he has skipped for 2:30 seconds and rested for 2:30 seconds.

    Teaching Hints:
    - Work up to a cadence of 120 jumps per minute.
    - Increase the skipping time and decrease the resting time.
    - Vary the task by having the student skip in reverse (i.e., bringing the rope over the head and behind the body).

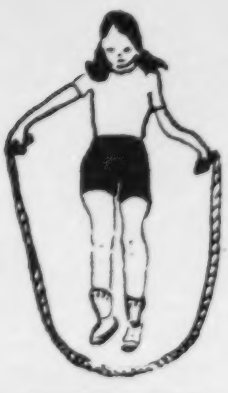


Fig. 10 Rope Skipping

17. Name: Bench Stepping
Equipment: Bench, Stairs, or Gymnasium Bleachers, Stop Watch
Description: Have the student stand upright facing the bench. On command, the student:

- Places his right foot on the bench.
- Brings up his left foot and stands erect.
- Lowers his right foot to the floor.
- Lowers his left to the floor.

(one cycle)

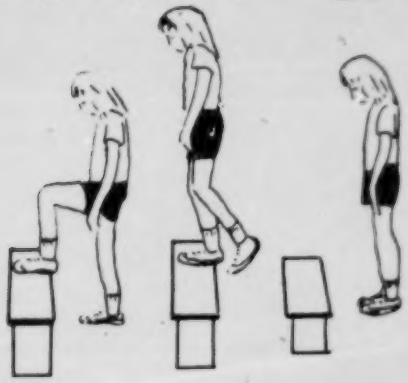


Fig. 11 Bench Stepping

- Continues until he has completed sixty cycles in a two-minute period (thirty cycles per minute).

Teaching Hints:

- Keep the cadence constant by: clapping hands; counting 1, 2, 3, 4; or using music.
- Increase the time, at periodic intervals, by thirty seconds until the students can perform the task for five minutes.

18. Name: Circuit Training
Equipment: Timer
Description: Have the student assume an upright position. On command, the student:

- Hops on his left foot for 100 counts.
- Hops on his right foot for 100 counts.
- Jumps on both feet for 100 counts.
- Performs 100 jumping jacks.
- Runs in place for 100 counts.

(one circuit)

- Repeats the circuit.
- Completes as many circuits as possible in ten minutes.

APPENDICES

APPENDIX A

PROJECT ACTIVE

ANALYSIS OF FINAL VITAL CAPACITY TEST SCORES
Township of Ocean School/Asbury Park School Districts
(T. Pagano/F. West/P. Cheney)

WILCOXON MATCHED-PAIRS SIGNED-RANK POST TEST SCORE COMPARISONS

Matched Pair	Expt. Pre	Expt. Post	Control Pre	Control Post	Difference	Rank of Difference	Ranks with Less Frequent Sign
1	1200	2800	1300	1500	1300	5	
2	1400	3200	1400	1400	1800	7	
3	1250	2900	1200	1400	1500	6	
4	2300	3000	2400	2200	800	4	
5	2000	2700	2100	2100	600	3	
6	500	1150	500	600	550	2	
7	950	1350	900	900	450	1	
Mean	1371.42	2442.85	1400.00	1442.85			T = 00**

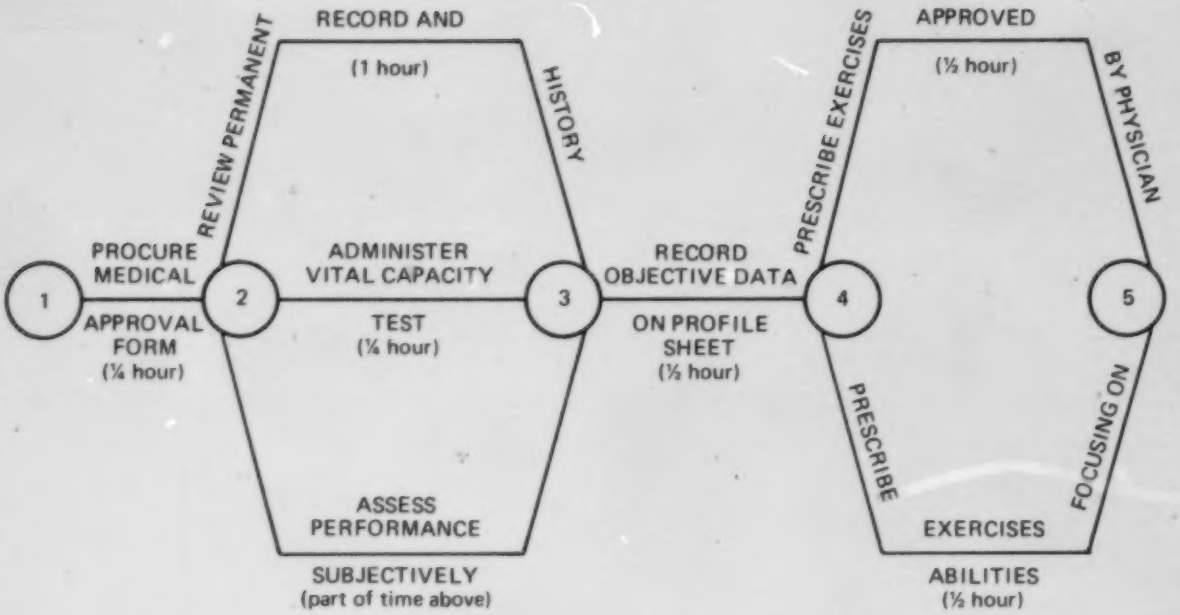
**Significant at the .01 level.

Abstract

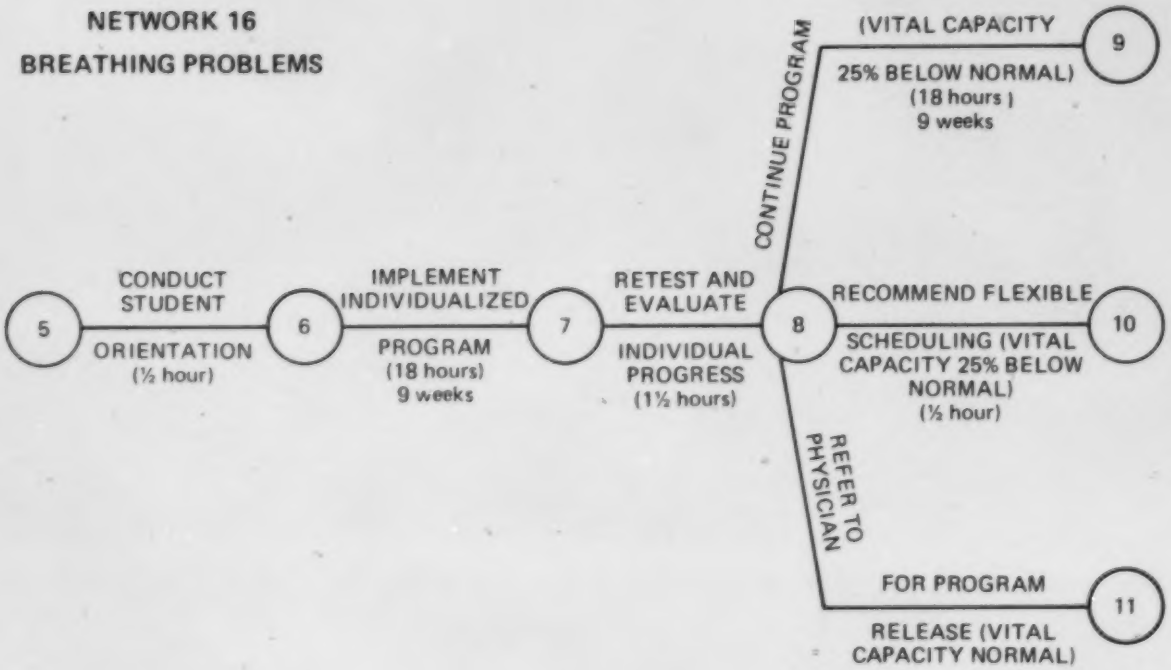
Fourteen males and females, ages 6-14, who were identified by physicians as asthmatics were matched on the basis of age, sex, other handicapping conditions, and pre-test vital capacity scores (dry spirometer). Other handicapping conditions included perceptual impairment and mental retardation. The Experimental Group received 3, 20-minute D&A periods (diaphragmatic breathing exercises), plus 2, 45-minute traditional P.E. periods per week. The Control Group participated in traditional P.E. for 2, 45-minute periods, plus the regular academic program. (Inclusive dates: November 15, 1974—April 15, 1975).

APPENDIX B
FLOW CHART AND ACTIVITY CHECKLIST

NETWORK 15
BREATHING PROBLEMS



NETWORK 16
BREATHING PROBLEMS



APPENDIX B (Continued)
ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
1	11		IMPLEMENT PROGRAM FOR CHILDREN WITH BREATHING PROBLEMS	15-16	Diaphragmatic breathing exercises will be prescribed for those students who receive medical permission to participate
1	2	¼ hour	Procure Medical Approval Form	15	Self-explanatory
2	3	1 hour	Review Permanent Record and Medical History	15	Self-explanatory
2	3	1 hour	Administer Vital Capacity Test -Test to be administered at the beginning and end of each period to determine tolerance to the prescribed activity	15	Vital capacity volume will be indicative of the volume of air expirated
2	3	part of time above	Assess Performance Subjectively -Record anecdotal remarks on student's prescription card regarding performance peculiarities	15	Self-explanatory
3	4	½ hour	Record Objective Test Data on Profile Sheet - Draw a line to connect each period's pre-test score - Record daily pre- and post-test scores	15	Profile data will provide a "visual picture" of student progress in terms of air expirated

APPENDIX B (Continued)
ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
4	5	½ hour	Prescribe Exercises Approved by the Physician ·Prescribe diaphragmatic and aerobic breathing exercises and activities (half the period) **Note:** Inform student he is to cease performance when he has extreme difficulty breathing	15	Students will be admitted to the program only upon approval of the family or school physician
4	5	½ hour	Prescribe Activities Based on Abilities ·Post a list of available tasks and activities (based on student interest inventory) ·Prescribe student-selected tasks and activities for half the period	15	Self-explanatory
5	6	½ hour	Conduct Student Orientation ·Explain class procedures, care and storage of supplies and equipment and safety rules ·Post a sample sheet of scores that have been plotted ·Prepare the necessary class forms	16	Self-explanatory

APPENDIX B (Continued)
ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
6	7	18 hours (9 weeks)	Implement Individualized Program •Set-up stations within the class for cycling, rope skipping, running-in-place, "step testing," and "jumping jacks" •Prepare a list of times and dates the gym is available for activities such as handball, basketball, tennis, table tennis, etc. •Record daily pre- and post-test VC scores and increased "circuits" performed	16	Self-explanatory
7	8	1½ hours	Retest and Evaluate Individual Progress . Retest, compare pre-test scores on the first and last day of the period • Record other data such as comparison of pre- and post-medical dosage, number and severity of "attacks," etc.	16	Self-explanatory
8	9	18 hours (9 weeks)	Continue Program: Vital Capacity 25% Below Norm • Counsel students to discuss the	16	VC score of 25% below the average score for the age group is indicative of sub-par performance

APPENDIX B (Continued)
ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
			possible reasons for lack of improvement · Discuss the problem with the medical team and parents for possible insight · Represcribe activities if deemed necessary		
8	10	½ hour	Recommend Flexible Scheduling: Vital Capacity Score 15% Below Norm · Schedule students in the unrestricted program for those activities that are not extremely vigorous	16	Self-explanatory
8	11	½ hour	Refer to Physician For Program Release: · Physician to approve readmittance to the unrestricted program Note: Release should be recommended *only* after student VC scores have been "normal" for a two or three week period	16	Self-explanatory

APPENDIX C STUDENT'S CERTIFICATE OF MERIT

The State of New Jersey

Department of Education
and
Project Active

ALL CHILDREN TOTALLY INVOLVED EXERCISING
Project No. 72-141, Title III, ESEA, P.L. 89-10

Hereby Acknowledges With Sincere Appreciation the Contribution of

for participation in

on

at

PROJECT ACTIVE

Deputy Assistant Commissioner, Branch of Special Education and Pupil Personnel Services

Project Director

Physical Education Consultant

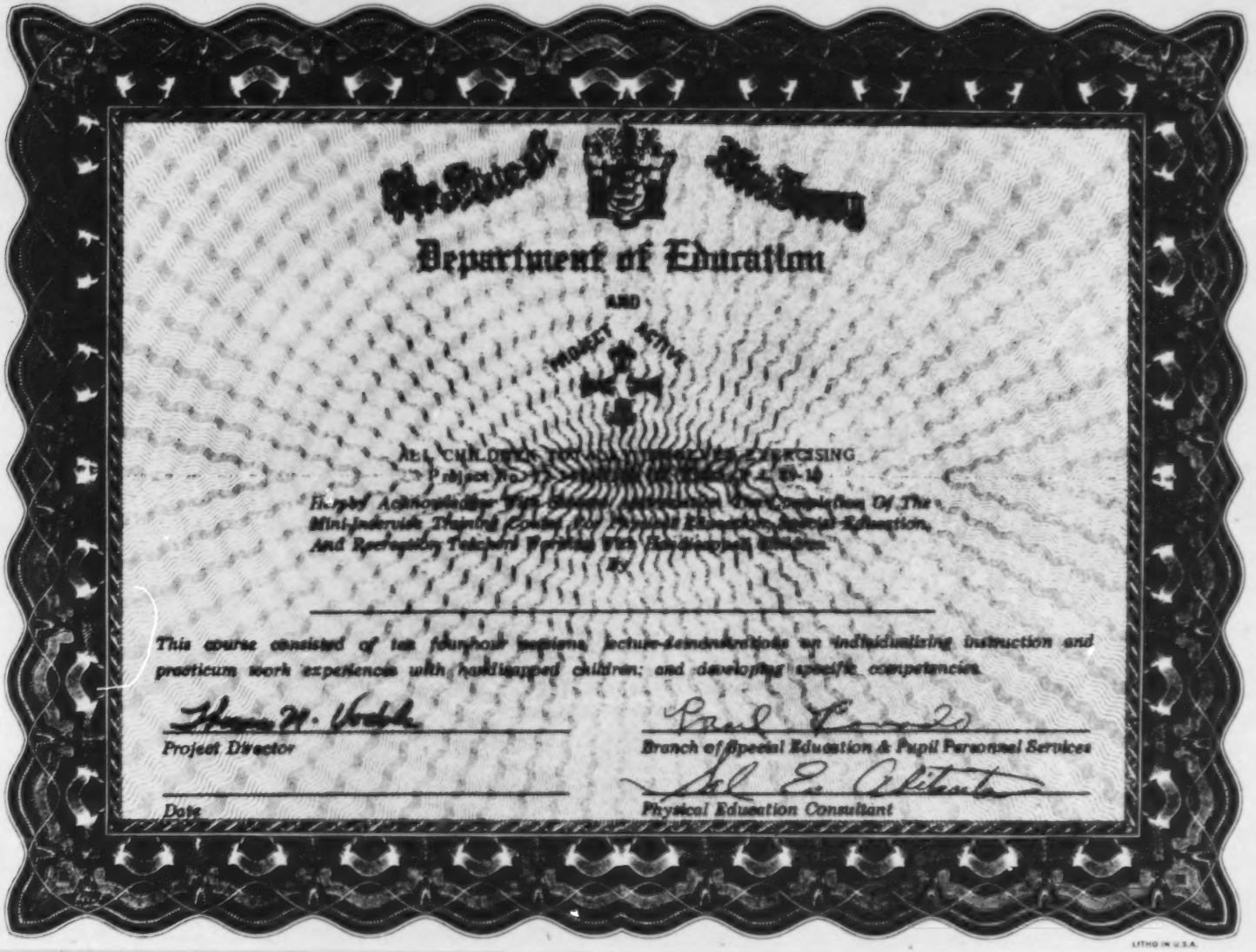
NJDE 415-5 (3/75)

45

62

63

APPENDIX D TEACHER'S CERTIFICATE OF ACHIEVEMENT



The State of New Jersey

Department of Education

AND

PROJECT ACTIVE

ALL CHILDREN [illegible] EXERCISING

Project No. [illegible] 69-14

Hereby Acknowledges With Pleasure The Completion Of The Mini-Instruction Training Course For Physical Education, Special Education, And Recreation Teachers Working With Handicapped Children

By

This course consisted of ten fourhour sessions, lecture-demonstrations on individualizing instruction and practicum work experiences with handicapped children; and developing specific competencies.

Thomas W. Woodside
Project Director

Paul Lemmo
Branch of Special Education & Pupil Personnel Services

Date

Sol E. Altstadter
Physical Education Consultant

LITHO IN U.S.A.

NJDE 401-16 (12/74)

APPENDIX E

SCHOOL SENTIMENT INDEX: Secondary Level

Directions:

For each statement, indicate the extent to which you agree or disagree by marking the answer sheet:

A) if you *strongly agree*
B) if you *agree*
C) if you *disagree*
D) if you *strongly disagree*

For Example:

1. My classes are too easy.

If you disagree with the statement you should mark C on the answer sheet as follows:

	A	B	C	D
1.	( )	( )	( )	( )

There are no right or wrong answers, so respond to each item as honestly as you can. Do not write your name on your answer sheet.

1. Most of my teachers try to explain to me why I deserve the grades I earn on assignments and tests.
2. I do my best in school because I can get ahead in the world with a good education.
3. Most of my teachers seem interested in the things I do outside of school.
4. Each morning I look forward to coming to school.
5. My school has too many rules.
6. Most of my teachers do not allow students much choice in what they study in class.
7. I often feel rushed and nervous at school.
8. Most of my teachers give assignments that are too difficult.
9. Students here are not as friendly as in other schools.
10. Most of my teachers try to make their subjects interesting to me.
11. I hate having to do homework.
12. My teachers are interested in what I have to say.
13. It is clear to me why I shouldn't drop out of school.
14. This school is run like a prison.
15. I most of my classes, I have the opportunity to choose assignments which are most interesting to me.
16. I have signed up for a subject just because it seemed like it would be interesting.
17. Most of my teachers give assignments that are just busy work.
18. I enjoy working on class projects with other students.
19. Most of my teachers really like their subjects.
20. I would rather play a game that I already know than learn a new one.
21. Most of my teachers seem personally concerned about me.
22. I enjoy learning in school more than learning on my own.
23. I don't usually enjoy working on puzzles and trying to solve difficult problems.
24. I think there is too much pressure in school.
25. Most of my teachers will accept suggestions from their students.
26. School is a good place for making friends.
27. I like the challenge of a difficult assignment.
28. Most of my teachers don't try very hard to understand young people.
29. Skipping school whenever I can doesn't really bother me.
30. I find it difficult to start working on my assignments until they are almost due.
31. I'm very interested in what goes on at this school.
32. Most of the decisions in my classes are made by the teachers.
33. My teachers ask me to memorize too many facts.
34. There are other reasons for going to school besides just learning.
35. There are important subjects not taught in school now which I would be interested in taking if they were offered.
36. Students have voice in determining how this school is run.
37. Most of my teachers have encouraged me to think for myself.
38. I think most of my teachers are fair to me.
39. I generally try to get involved in many school activities.
40. Most of my teachers give me some idea of what will be on their tests.
41. I really like most of the kids at this school.
42. My teachers don't allow me to be as creative as I am able to be.
43. Most of my teachers do not recognize my right to a different opinion.
44. It would be difficult to get the most popular kids in school to include those who aren't as popular in their activities.
45. Even if I wanted to join certain groups here at school, I just wouldn't be accepted.
46. I enjoy talking to many of my teachers after class.
47. Most of my teachers are critical of the way young people dress or talk.
48. In order to win an office at this school you've got to be in the right crowd.
49. Many of my teachers frequently show a lack of preparation.
50. It isn't difficult for a new student to find friends here.

APPENDIX E (Continued)

51. Many of my teachers could be trusted if I discussed a personal problem with them.
52. My favorite classes, regardless of subject, are those in which I learn the most.
53. School is important to me because I find many of the things I learn are useful outside of school.
54. School is just a place to keep kids off the street.
55. Our school is so large, I often feel lost in the crowd.
56. I usually get the grade I deserve in a class.
57. Teachers are usually the friendliest with the bright students.
58. I try to do good work in my classes, because you never know when the information will be useful.
59. Most of my teachers are still fair with me as a person even when I've done poorly on my school work.
60. There are enough different groups here at school for any type of student to find friends.
61. Most of my teachers make it clear about how much the students can "get away with" in class.
62. I enjoy the social life here.
63. Everyone knows who the real losers in this school are.
64. There are many closed groups of students here.
65. Most of my teachers like working with young people.
66. Sometimes I just can't put a book down until I'm finished with it.
67. Most of my teachers are too concerned with discipline sometimes.
68. It is difficult for me to see my education as a stepping stone to future success.
69. At school, other people really care about me.
70. If I thought I could win, I'd like to run for an elected student body office.
71. Most of my teachers will discuss any changes made to my grade.
72. Most of my teachers just don't care about students if they're not going to college.
73. I usually never do more school work than just what is assigned.
74. Most of the teachers at my school cannot control their classes.
75. It is possible to be popular in school and also be an individualist.
76. Lunch time at school is not fun.
77. Many of my teachers are often impatient.
78. If I had the choice, I wouldn't go to school at all.
79. Many of my teachers have "pets."
80. Most of my teachers often waste too much time explaining things.
81. Occasionally I have discovered things on my own that were related to some of my school subjects.
82. If school were more related to the skills I'll need after I graduate, I might be more interested.

APPENDIX E (Continued)

ANSWER SHEET

	A	B	C	D		A	B	C	D		A	B	C	D
1.	☐	☐	☐	☐	29.	☐	☐	☐	☐	57.	☐	☐	☐	☐
2.	☐	☐	☐	☐	30.	☐	☐	☐	☐	58.	☐	☐	☐	☐
3.	☐	☐	☐	☐	31.	☐	☐	☐	☐	59.	☐	☐	☐	☐
4.	☐	☐	☐	☐	32.	☐	☐	☐	☐	60.	☐	☐	☐	☐
5.	☐	☐	☐	☐	33.	☐	☐	☐	☐	61.	☐	☐	☐	☐
6.	☐	☐	☐	☐	34.	☐	☐	☐	☐	62.	☐	☐	☐	☐
7.	☐	☐	☐	☐	35.	☐	☐	☐	☐	63.	☐	☐	☐	☐
8.	☐	☐	☐	☐	36.	☐	☐	☐	☐	64.	☐	☐	☐	☐
9.	☐	☐	☐	☐	37.	☐	☐	☐	☐	65.	☐	☐	☐	☐
10.	☐	☐	☐	☐	38.	☐	☐	☐	☐	66.	☐	☐	☐	☐
11.	☐	☐	☐	☐	39.	☐	☐	☐	☐	67.	☐	☐	☐	☐
12.	☐	☐	☐	☐	40.	☐	☐	☐	☐	68.	☐	☐	☐	☐
13.	☐	☐	☐	☐	41.	☐	☐	☐	☐	69.	☐	☐	☐	☐
14.	☐	☐	☐	☐	42.	☐	☐	☐	☐	70.	☐	☐	☐	☐
15.	☐	☐	☐	☐	43.	☐	☐	☐	☐	71.	☐	☐	☐	☐
16.	☐	☐	☐	☐	44.	☐	☐	☐	☐	72.	☐	☐	☐	☐
17.	☐	☐	☐	☐	45.	☐	☐	☐	☐	73.	☐	☐	☐	☐
18.	☐	☐	☐	☐	46.	☐	☐	☐	☐	74.	☐	☐	☐	☐
19.	☐	☐	☐	☐	47.	☐	☐	☐	☐	75.	☐	☐	☐	☐
20.	☐	☐	☐	☐	48.	☐	☐	☐	☐	76.	☐	☐	☐	☐
21.	☐	☐	☐	☐	49.	☐	☐	☐	☐	77.	☐	☐	☐	☐
22.	☐	☐	☐	☐	50.	☐	☐	☐	☐	78.	☐	☐	☐	☐
23.	☐	☐	☐	☐	51.	☐	☐	☐	☐	79.	☐	☐	☐	☐
24.	☐	☐	☐	☐	52.	☐	☐	☐	☐	80.	☐	☐	☐	☐
25.	☐	☐	☐	☐	53.	☐	☐	☐	☐	81.	☐	☐	☐	☐
26.	☐	☐	☐	☐	54.	☐	☐	☐	☐	82.	☐	☐	☐	☐
27.	☐	☐	☐	☐	55.	☐	☐	☐	☐					
28.	☐	☐	☐	☐	56.	☐	☐	☐	☐					

APPENDIX E (Continued)

SCORING TEMPLATE

	A	B	C	D
1.	4☐	3☐	2☐	1☐
2.	4☐	3☐	2☐	1☐
3.	4☐	3☐	2☐	1☐
4.	4☐	3☐	2☐	1☐
5.	1☐	2☐	3☐	4☐
6.	1☐	2☐	3☐	4☐
7.	1☐	2☐	3☐	4☐
8.	1☐	2☐	3☐	4☐
9.	1☐	2☐	3☐	4☐
10.	4☐	3☐	2☐	1☐
11.	1☐	2☐	3☐	4☐
12.	4☐	3☐	2☐	1☐
13.	4☐	3☐	2☐	1☐
14.	1☐	2☐	3☐	4☐
15.	4☐	3☐	2☐	1☐
16.	4☐	3☐	2☐	1☐
17.	1☐	2☐	3☐	4☐
18.	4☐	3☐	2☐	1☐
19.	4☐	3☐	2☐	1☐
20.	4☐	3☐	2☐	1☐
21.	4☐	3☐	2☐	1☐
22.	4☐	3☐	2☐	1☐
23.	1☐	2☐	3☐	4☐
24.	1☐	2☐	3☐	4☐
25.	4☐	3☐	2☐	1☐
26.	4☐	3☐	2☐	1☐
27.	4☐	3☐	2☐	1☐
28.	1☐	2☐	3☐	4☐
29.	1☐	2☐	3☐	4☐
30.	1☐	2☐	3☐	4☐
31.	4☐	3☐	2☐	1☐
32.	1☐	2☐	3☐	4☐
33.	1☐	2☐	3☐	4☐
34.	4☐	3☐	2☐	1☐
35.	4☐	3☐	2☐	1☐
36.	4☐	3☐	2☐	1☐
37.	4☐	3☐	2☐	1☐
38.	4☐	3☐	2☐	1☐
39.	4☐	3☐	2☐	1☐
40.	4☐	3☐	2☐	1☐
41.	4☐	3☐	2☐	1☐
42.	1☐	2☐	3☐	4☐
43.	1☐	2☐	3☐	4☐
44.	1☐	2☐	3☐	4☐
45.	1☐	2☐	3☐	4☐
46.	4☐	3☐	2☐	1☐
47.	1☐	2☐	3☐	4☐
48.	1☐	2☐	3☐	4☐
49.	1☐	2☐	3☐	4☐
50.	4☐	3☐	2☐	1☐
51.	4☐	3☐	2☐	1☐
52.	4☐	3☐	2☐	1☐
53.	4☐	3☐	2☐	1☐
54.	1☐	2☐	3☐	4☐
55.	1☐	2☐	3☐	4☐
56.	4☐	3☐	2☐	1☐
57.	1☐	2☐	3☐	4☐
58.	4☐	3☐	2☐	1☐
59.	4☐	3☐	2☐	1☐
60.	4☐	3☐	2☐	1☐
61.	4☐	3☐	2☐	1☐
62.	4☐	3☐	2☐	1☐
63.	1☐	2☐	3☐	4☐
64.	1☐	2☐	3☐	4☐
65.	4☐	3☐	2☐	1☐
66.	4☐	3☐	2☐	1☐
67.	1☐	2☐	3☐	4☐
68.	1☐	2☐	3☐	4☐
69.	4☐	3☐	2☐	1☐
70.	4☐	3☐	2☐	1☐
71.	4☐	3☐	2☐	1☐
72.	1☐	2☐	3☐	4☐
73.	1☐	2☐	3☐	4☐
74.	1☐	2☐	3☐	4☐
75.	4☐	3☐	2☐	1☐
76.	1☐	2☐	3☐	4☐
77.	1☐	2☐	3☐	4☐
78.	1☐	2☐	3☐	4☐
79.	1☐	2☐	3☐	4☐
80.	1☐	2☐	3☐	4☐
81.	4☐	3☐	2☐	1☐
82.	1☐	2☐	3☐	4☐

APPENDIX F

WEAR ATTITUDE INVENTORY INSTRUCTIONS, ADMINISTRATION

Form A

1. If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.
2. Physical education activities provide no opportunities for learning to control the emotions.
3. Physical education is one of the most important subjects in helping to establish and maintain desirable social standards.
4. Vigorous physical activity works off harmful emotional tensions.
5. I would take physical education only if it were required.
6. Participation in physical education makes no contribution to the development of poise.
7. Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.
8. Calisthenics taken regularly are good for one's general health.
9. Skill in active games or sports is not necessary for leading the fullest kind of life.
10. Physical education does more harm physically than it does good.
11. Associating with others in some physical education activity is fun.
12. Physical education classes provide situations for the formation of attitudes which will make one a better citizen.
13. Physical education situations are among the poorest for making friends.
14. There is not enough value coming from physical education to justify the time consumed.
15. Physical education skills make worthwhile contributions to the enrichment of living.
16. People get all the physical exercise they need in just taking care of their daily work.
17. All who are physically able will profit from an hour of physical education each day.
18. Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for everyday living.
19. Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.
20. Participation in physical education activities makes for a more wholesome outlook on life.
21. Physical education adds nothing to the improvement of social behavior.
22. Physical education class activities will help to relieve and relax physical tensions.
23. Participation in physical education activities helps a person to maintain a healthful emotional life.
24. Physical education is one of the more important subjects in the school program.
25. There is little value in physical education as far as physical well-being is concerned.
26. Physical education should be included in the program of every person.
27. Skills learned in a physical education class do not benefit a person.
28. Physical education provides situations for developing desirable character qualities.
29. Physical education makes for more enjoyable living.
30. Physical education has no place in modern education.

Form B

1. Associations in physical education activities give people a better understanding of each other.
2. Engaging in vigorous physical activity gets one interested in practicing good health habits.
3. The time spent in getting ready for and engaging in a physical education class could be more profitably spent in other ways.
4. A person's body usually has all the strength it needs without participation in physical education activities.
5. Participation in physical education activities tends to make one a more socially desirable person.
6. Physical education in schools does not receive the emphasis that it should.
7. Physical education classes are poor in opportunities for worthwhile social experiences.
8. A person would be better off emotionally if he did not participate in physical education.
9. It is possible to make physical education a valuable subject by proper selections of activities.
10. Developing a physical skill brings mental relaxation and relief.
11. Physical education classes provide nothing which will be of value outside the class.
12. There should not be over two one-hour periods per week devoted to physical education in schools.
13. Belonging to a group, for which opportunity is provided in team activities, is a desirable experience for a person.
14. Physical education is an important subject in helping a person gain and maintain all-round good health.

Source: C.L. Wear, "Construction of Equivalent Forms of An Attitude Scale," *Research Quarterly*, XXV (1955) pp. 113-119.

APPENDIX F (Continued)

15. No definite beneficial results come from participation in physical education activities.
16. Engaging in group physical education activities is desirable for proper personality development.
17. Physical education activities tend to upset a person emotionally.
18. For its contributions to mental and emotional well-being physical education should be included in the program of every school.
19. I would advise anyone who is physically able to take physical education.
20. As far as improving physical health is concerned a physical education class is a waste of time.
21. Participation in physical education class activities tends to develop a wholesome interest in the functioning of one's body.
22. Physical education classes give a person an opportunity to have a good time.
23. The final mastering of a certain movement or skill in a physical education class brings a pleasurable feeling that one seldom experiences elsewhere.
24. Physical education classes provide values which are useful in other parts of daily living.
25. Physical education contributes little toward the improvement of social behavior.
26. Physical education should be required of all who are physically able to participate.
27. The time devoted to physical education in schools could be more profitable used in study.
28. The skills learned in a physical education class do not add anything of value to a person's life.
29. Physical education does more harm socially than good.

WEAR ATTITUDE INVENTORY SCORING KEY

(FORM A) & FORM B (CIRCLE ONE)

PRINT FULL NAME _____ GRADE _____ DAYS & PERIOD _____ DATE _____ INSTRUCTOR _____

	N*	VALUE
5		
4		
3		

	N	VALUE
2		
1		
TOTAL		

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	5	4	3	2	1
2.	5	4	3	2	1
3.	1	2	3	4	5
4.	1	2	3	4	5
5.	5	4	3	2	1
6.	5	4	3	2	1
7.	1	2	3	4	5
8.	1	2	3	4	5
9.	5	4	3	2	1
10.	5	4	3	2	1
11.	1	2	3	4	5
12.	1	2	3	4	5
13.	5	4	3	2	1
14.	5	4	3	2	1
15.	1	2	3	4	5
16.	5	4	3	2	1
17.	1	2	3	4	5
18.	1	2	3	4	5
19.	5	4	3	2	1
20.	1	2	3	4	5
21.	5	4	3	2	1
22.	1	2	3	4	5
23.	1	2	3	4	5
24.	1	2	3	4	5
25.	5	4	3	2	1
26.	1	2	3	4	5
27.	5	4	3	2	1
28.	1	2	3	4	5
29.	1	2	3	4	5
30.	5	4	3	2	1

*Example:

	N	VALUE
5	𝍸	25
4	II	8

Instructions:

1. Punch out all areas enclosed by parentheses marks.
2. Place "scoring key" over student's answer sheet.
3. Compute student's total score for all items.

APPENDIX F (Continued)

WEAR ATTITUDE INVENTORY SCORING KEY

FORM A & (FORM B) (CIRCLE ONE)

PRINT FULL NAME _____ GRADE _____ DAYS & PERIOD _____ DATE _____ INSTRUCTOR _____

	N*	VALUE
5		
4		
3		

	N	VALUE
2		
1		
TOTAL		

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	1	2	3	4	5
2.	1	2	3	4	5
3.	5	4	3	2	1
4.	5	4	3	2	1
5.	1	2	3	4	5
6.	1	2	3	4	5
7.	5	4	3	2	1
8.	5	4	3	2	1
9.	1	2	3	4	5
10.	1	2	3	4	5
11.	5	4	3	2	1
12.	5	4	3	2	1
13.	1	2	3	4	5
14.	1	2	3	4	5
15.	5	4	3	2	1
16.	1	2	3	4	5
17.	5	4	3	2	1
18.	1	2	3	4	5
19.	1	2	3	4	5
20.	5	4	3	2	1
21.	1	2	3	4	5
22.	1	2	( )	4	5
23.	1	2	3	4	5
24.	5	4	3	2	1
25.	1	2	3	4	5
26.	1	2	3	4	5
27.	5	4	3	2	1
28.	5	4	3	2	1
29.	5	4	3	2	1

*Example:	N	VALUE
5	⧻	25
4	II	8

Instructions:

1. Punch out all areas enclosed by parentheses marks.
2. Place "scoring key" over student's answer sheet.
3. Compute student's total score for all items.

PERCENTAGE OF VITAL CAPACITY **WOMEN** (CALCULATED FROM STANDING HEIGHT) IN CUBIC CENTIMETERS

Standing Height in cm	Standing Height in inches	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500
139.7	55	21	23	29	32	36	39	43	47	50	54	57	61	64	68	71	75	79	82	86	89	93	96	100	103	107	111	114	118	121											
142.2	56	21	23	28	32	33	39	42	46	49	53	56	60	63	67	70	74	77	81	84	88	91	95	98	102	105	109	112	116	119	123										
144.8	57	21	24	28	31	35	38	41	45	48	52	55	59	62	66	69	72	76	79	83	86	90	93	97	100	103	107	110	114	117	121										
147.3	58	20	24	27	31	34	38	41	44	47	51	54	58	61	64	68	71	75	78	81	85	88	91	95	98	102	105	108	112	115	118	122									
149.8	59	20	23	27	30	33	37	40	43	47	50	53	57	60	63	67	70	73	77	80	83	87	90	93	97	100	103	107	110	113	117	120	120								
152.4	60	20	23	26	30	33	36	39	43	46	49	52	56	59	62	66	69	72	75	79	82	85	88	92	95	98	102	105	108	112	115	118	121								
154.9	61		23	26	29	32	36	39	42	45	48	52	55	58	61	65	68	71	74	77	81	84	87	90	94	97	100	103	106	110	113	116	119	122								
157.4	62		22	25	29	32	35	38	41	44	48	51	54	57	60	63	67	70	73	76	79	83	86	89	92	95	98	102	105	108	111	114	118	121								
160.0	63		22	25	28	31	35	38	41	44	47	50	53	56	59	62	66	69	72	75	78	81	84	88	91	94	97	100	103	106	109	112	116	119	122							
162.5	64		22	25	28	31	34	37	40	43	46	49	52	55	58	62	65	68	71	74	77	80	83	86	89	92	95	98	101	105	108	111	114	117	120							
165.1	65		21	24	27	30	33	36	39	42	46	49	52	55	58	61	64	67	70	73	76	79	82	85	88	91	94	97	100	103	106	109	112	115	118	121						
167.6	66		21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	101	104	107	110	113	116	119	122					
170.2	67		21	24	27	29	32	35	38	41	44	47	50	53	56	59	62	65	68	71	74	77	79	82	85	88	91	94	97	100	103	106	109	112	115	118	120	123				
172.7	68		20	23	26	29	32	35	38	41	44	46	49	52	55	58	61	64	67	69	72	75	78	81	84	87	90	93	96	98	101	104	107	110	113	116	119	121				
175.3	69		20	23	26	29	31	34	37	40	43	46	49	51	54	57	60	63	66	68	71	74	77	80	83	85	88	91	94	97	100	102	105	108	111	114	117	120	123			
177.8	70		20	22	25	28	31	34	37	39	42	45	48	51	53	56	59	62	65	67	70	73	76	79	82	84	87	90	93	96	98	101	104	107	110	112	115	118	121			
180.4	71			22	25	28	31	33	36	39	42	44	47	50	53	55	58	61	64	66	69	72	75	78	80	83	86	89	91	94	97	100	102	105	108	111	114	116	119	122		
182.9	72			22	25	27	30	33	36	38	41	44	47	49	52	55	57	60	63	66	68	71	74	77	79	82	85	88	90	93	96	98	101	104	107	109	112	115	118	120		
185.4	73			22	24	27	30	32	35	38	40	43	46	49	51	54	57	59	62	65	67	70	73	76	78	81	84	86	89	92	94	97	100	102	105	108	111	113	116	119	121	
188.0	74			21	24	27	29	32	35	37	40	43	45	48	51	53	56	59	61	64	67	69	72	75	77	80	83	85	88	90	93	96	99	101	104	106	109	112	114	117	120	
		36.6	42.7	48.8	54.9	61.0	62.1	73.2	79.3	85.4	91.5	97.6	103.7	109.8	115.9	122.0	128.1	134.2	140.3	146.4	152.5	158.6	164.7	170.8	176.9	183.0	189.1	195.2	201.3	207.4	213.5	219.6	225.7	231.8	237.9	244.0	250.1	256.2	262.3	268.4	274.5

PERCENTAGE OF VITAL CAPACITY IN CUBIC INCHES

PERCENTAGE OF VITAL CAPACITY **MEN** (CALCULATED FROM STANDING HEIGHT) IN CUBIC CENTIMETERS

Standing height in cms	ins	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800
152.4	60	19	22	25	28	30	33	36	39	41	44	47	50	52	55	58	61	64	66	69	72	75	77	80	83	86	88	91	94	97	99	102	105	108	110	113	116	119	121																	
154.9	61	19	22	24	27	30	33	35	38	41	43	46	49	52	54	57	60	63	65	68	71	73	76	79	82	84	87	90	92	95	98	100	103	106	109	111	114	117	120	122															
157.4	62		21	24	27	30	32	35	38	40	43	46	49	51	54	57	59	62	65	67	70	73	75	78	81	83	86	89	91	94	97	99	102	105	107	110	113	115	118	120	123														
160.0	63		21	23	26	28	31	34	36	39	42	44	47	49	52	55	58	60	63	66	68	71	74	76	79	81	84	87	89	92	95	97	99	102	105	108	110	113	115	118	121	123													
162.5	64		21	23	26	28	31	33	36	38	41	43	46	48	51	53	56	58	61	64	66	69	71	74	76	79	81	84	86	89	91	94	97	99	102	104	107	109	112	114	117	119	122												
165.1	65		20	23	25	28	30	33	35	38	40	43	45	48	50	53	55	58	60	63	65	68	70	73	75	78	80	83	85	87	90	92	95	97	99	102	104	107	109	111	114	116	119	121	124									
167.6	66		20	22	25	27	30	32	35	37	40	42	45	47	50	52	54	57	59	62	64	67	69	72	74	77	79	81	84	86	89	91	94	96	98	101	103	106	108	111	113	115	118	120	123									
170.2	67		20	22	24	27	29	31	34	36	38	41	43	45	48	50	52	55	57	59	61	64	66	68	71	73	75	78	80	82	85	87	89	92	94	96	99	101	103	106	108	110	113	115	118	120	122							
172.7	68		19	22	24	26	29	31	33	36	38	41	43	45	48	50	52	55	57	60	62	64	67	69	71	74	76	79	81	83	86	88	91	93	95	98	100	102	105	107	110	112	114	117	119	121	124							
175.3	69		19	21	24	26	28	31	33	35	38	40	42	45	47	49	52	54	56	59	61	63	66	68	70	73	75	78	80	82	85	87	89	92	94	96	99	101	103	106	108	110	112	115	117	119	121	123						
177.8	70		19	21	23	26	28	30	32	34	36	38	40	43	45	47	49	51	53	55	57	60	62	64	66	68	70	72	75	77	79	81	83	85	87	89	92	94	96	98	100	102	104	106	108	111	113	115	117	119	121	123	
180.4	71			21	23	25	27	29	32	34	36	38	40	42	44	46	48	50	53	55	57	59	61	63	65	67	69	72	74	76	78	80	82	84	86	88	90	92	94	96	98	101	103	105	107	109	111	113	115	117	120	122		
182.9	72			20	22	24	26	28	31	33	35	37	39	42	44	46	48	50	52	54	56	58	61	63	65	67	70	72	74	77	79	81	83	85	88	90	92	94	96	99	101	103	105	107	109	111	114	116	118	120	122	125		
185.4	73			19	21	24	26	28	30	32	35	37	39	41	43	45	47	50	52	54	56	58	60	63	65	67	69	71	73	76	78	80	82	84	86	89	91	93	95	97	99	101	103	106	108	110	112	114	117	119	121	123		
188.0	74			19	21	23	26	28	30	32	34	36	38	40	43	45	47	49	51	53	55	57	60	62	64	66	68	70	72	75	77	79	81	83	85	87	89	92	94	96	98	100	102	104	106	108	111	113	115	117	119	121	123	
190.5	75			21	23	25	27	29	32	34	36	38	40	42	44	46	48	50	53	55	57	59	61	63	65	67	69	71	73	76	78	80	82	84	86	88	90	93	95	97	99	101	103	105	107	109	111	113	115	118	120	122		
193.0	76			21	23	25	27	29	31	33	35	37	39	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	75	77	79	81	83	85	87	89	91	93	95	97	99	101	104	106	108	110	112	114	116	118	120		
		42.7	48.8	54.9	61.0	62.1	73.2	79.3	85.4	91.5	97.6	103.7	109.8	115.9	122.0	128.1	134.2	140.3	146.4	152.5	158.6	164.7	170.8	176.9	183.0	189.1	195.2	201.3	207.4	213.5	219.6	225.7	231.8	237.9	244.0	250.1	256.2	262.3	268.4	274.5	280.6	286.7	292.8	298.9	305.0	311.1	317.2	323.3	329.4	335.5	341.6	347.7	353.8

PERCENTAGE OF VITAL CAPACITY IN CUBIC INCHES

APPENDIX H

PROJECT ACTIVE
SUPPLY AND EQUIPMENT NEEDS FOR
PROGRAM IMPLEMENTATION

To: Adopting School Districts/Agencies

From: Dr. Thomas M. Vodola, Director, Project ACTIVE

Re: **Supply/Equipment Needs for Program Implementation**

The appended tables provide specific information relative to supply and equipment needs for program installation. The format has been designed to facilitate the identification of items for those who are adopting or adapting one phase of the program, or the total program. The information supplied includes:

- The specific item
- Essential items needed (coded with an "N")
- The number of items needed
- Items recommended (coded with an "R")
- The unit price of each item
- The source of the item

The tables reflect the basic needs for implementing the program in one school. It is recommended that one set be purchased for each additional school involved. (If a district has some of the items on hand, it obviates the need for that expenditure.)

Project Director
Thomas M. Vodola, Ed.D.
Township of Ocean School District
Ocean Township Elementary School
Dow Avenue
Oakhurst, N.J. 07755
201–229-4100 Ext. 260

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
No. 92670 Saf-T Bat (Plastic) No. 705	X		2.25	J.L. Hammett Co.	3	X										X			
Plastic Measuring Tape 36"	X			Local Fabric Shop				X		X				X					
White Shoe Polish, Bottle	X		.55	Local Supermarket	3	X		X						X		X			
No. 39170 Water Color Marking Pen, Black	X		40	J.L. Hammett	1									X					
No. 61145 Pegboard and Pegs, No. 7615 (optional)		X	3.45	J.L. Hammett	6 sets		X										X		
PEC1064 Walk On Letters	X		29.85	J.A. Preston	1 set	X													
No. 9201 Audible Ball Electronic	X			Royal Nat'l. Inst. for the Blind, 224-6-8 Great Portland St. London, W-1, England	1													X	
No. 92663 Audi-Ball, No. AB-30 (optional)		X		J.L. Hammett	1													X	
No. 1-0357 Staley Sports Field Kit (optional)				American Printing House for the Blind 1839 Frankfort Ave. P.O. Box 6085 Louisville, Kentucky 40206	1														
No. 1-0304 Portable Audible Goal Locator		X		American Printing House for the Blind	1													X	
Barbells		X		J.L. Hammett	1				X		X				X		X		

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS[1]

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
PC5026 Shoulder Breadth, Length Caliper	X		74.90	J.A. Preston Corp. 71 Fifth Avenue N.Y., N.Y. 10003	1					X									
PC5028 Large Skinfold (Fat Caliper)	X		142.45	J.A. Preston	1					X									
PC5155 Dry Spirometer	X		176.85	J.A. Preston	1							X							
PC5156 Disposable Paper Mouthpieces	X		31.60	J.A. Preston	500							X							
PC5059 Flexometer		X	246.65	J.A. Preston	1														
or PC5054 Plastic Goniometer (Transparent)	X		20.20	J.A. Preston	1											X			
PC5022A Symmetrigraf (Posture Grid)	X		80.60	J.A. Preston	1									X					
No. 305 Stall Bars, Starter Unit (optional)		X		Nissen Corp. 930 27th Ave. Cedar Rapids, Iowa	1										X				
No. 39 Wall Mounted Horizontal Ladder (optional)		X		Nissen Corp.	1										X				
or Construct Horizontal Ladder (optional)		X		Maintenance Dept.	1										X				X
No. 92602 Utility Playground Ball, PG8½	X		3.00	J.L. Hammett Co. 2393 Vaux Hall Rd. Union, N.J. 07083	12	X										X			
No. 92655 Fun Balls (Plastic) S-650	X		.55	J.L. Hammett Co.	12	X										X			

[1] Contact source for unlisted prices.

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
LP6050 Coordination Skills		X	12.95	Kimbo Educational P.O. Box 246 Deal, N.J. 07723	1		X												
EA606.7 Developing Perceptual Motor Needs		X	12.95	Kimbo Educational	1		X												
EA605 Developing Body Awareness		X	6.50	Kimbo Educational	1		X										X		X
EA655 Relaxation		X	6.50	Kimbo Educational	1		X						X		X		X		X
EA657 Dynamic Balance		X	12.95	Kimbo Educational	1		X												X
EA658 Balance Beam Activity		X	12.95	Kimbo Educational	1		X												
EA656 Pre-Tumbling Skills		X	12.95	Kimbo Educational	1		X												X
LP5000 Developing Body Space Perception Motor Skills CM1056, 1058, 1079		X	15.75	Kimbo Educational	1		X										X		X
LP5000 Teaching Children Mathematics through Games		X	12.95	Kimbo Educational	1		X												
LP8060 To Move Is To Be		X	12.95	Kimbo Educational	1		X												
LP4000 Rhythmic Rope Jumping		X	10.95	Kimbo Educational	1		X		X		X		X						X
4032.34 Developing Exercises		X		Dance Records, Inc. Waldwick, N.J. 07463	1				X				X						
4008 Elementary School Exercises to Music		X		Dance Records, Inc.	1		X		X				X						X
Foot Disinfectant	X			Local Drug Store	1 Gal.									X				X	

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stopwatch	X			J.L. Hammett	1	X		X		X		X							
PEC2747A Beanbag Game		X	50.45	J.A. Preston	2												X		
PEC2747B Beanbag Set		X	32.40	J.A. Preston	1												X		
Chinning Bar	X			Nissen Corp.	2			X							X		X		X
Mats, 5' x 10'	X			Nissen Corp.	3	X		X				X		X		X		X	
No. 92882 Number 3 Fleece Balls	X		1.50	J.L. Hammett	3	X										X		X	
No. 92645 Number CT850 Endure Tetherball	X		10.90	J.L. Hammett	1	X										X			
PEC4806 Walk-On Number Kit	X		17.85	J.A. Preston	1 set	X													
No. 92656 Number S-630 Fun Balls	X		.40	J.L. Hammett	12	X										X			
No. 84252 Rubber Quoit Set	X		5.65	J.L. Hammett	1 set	X													
No. 60676 Footsteps to Numbers, 60"L	X		8.00	J.L. Hammett	1 set	X													
No. 92730 Jump Rope (7')	X		1.30	J.L. Hammett	6			X		X		X							
Shape O Ball		X		Tupperware Products	1	X													X
PEC2600 Doorway Chinning Bar		X	14.95	J.A. Preston	1				X									X	
PEC2766A Deluxe Safe-T-Play Batting Set		X	56.90	J.A. Preston	1		X											X	
PEC2771B Pitch Back		X		J.A. Preston	1		X												
Masking Tape		X		Local Store	6 roll		X											X	

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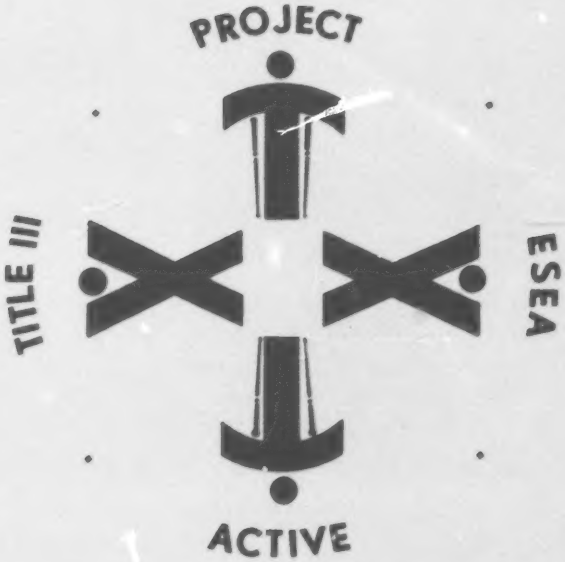
PROJECT
TITLE III
ESEA
ACTIVE